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FIRST LINES
OF THE
PRACTICE OF PHYSIC.

BY

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IN THREE VOLUMES.

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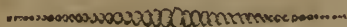
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PREFACE.

TO deliver a System of the Doctrines and Rules proper for directing the Practice of Physic, is an undertaking that appears to me to be attended with great difficulty ; and, after an experience of more than forty years in that practice, as well as after much reading and reflection, it was with great diffidence that I ever entered upon such a work. It was, however, what seemed to be my duty as a Professor that induced me to make the attempt ; and I was engaged in it by the same sentiments that the illustrious Dr. Boerhaave has expressed in the following passage of the Preface to his Institutions : *Simul enim docendo admotus eram sensi, propriorum cogitatorum explicatione docentem plus proficere, quam si opus ab alio conscriptum interpretari suscipit. Sua quippe optime intelligit, sua cuique præ cæteris placent, unde clarior fere doctrina, atque animata plerumque sequitur oratio. Qui vero sensa alterius exponit, infelicius sæpenumero eadem assequitur ; quumque suo quisque sensu abundat, multa refutanda frequenter invenit, unde gravem frustra laborem aggravat, minusque incitata dictione utitur.* It is well known, that a Text book is not only extremely useful, but necessary to Students who are to hear Lectures ; and from the same considerations

tions that moved Dr. Boerhaave, I also wished to have one for myself; while at the same time, from some peculiar circumstances in my situation, I had some additional inducements to undertake such a work.

BEFORE I was established as a Professor of the Practice of Physic in this University, I had been employed in giving Clinical Lectures in the Royal Infirmary; and upon that occasion had delivered, what, in my own opinion, seemed most just with regard to both the nature and the cure of the diseases of which I had occasion to treat. But I soon found, that my doctrines were taken notice of, as new, and peculiar to myself; and were accordingly severely criticised by those who, having long before been trained up in the system of Boerhaave, had continued to think that that system neither required any change, nor admitted of any amendment. I found, at the same time, that my doctrines were frequently criticised by persons who either had not been informed of them correctly, or who seemed not to understand them fully; and therefore, as soon as I was employed to teach a more complete system of the Practice of Physic, I judged it necessary to publish a Text book, not only for the benefit of my hearers, but that I might also have an opportunity of obtaining the opinion of the public more at large, and thereby be enabled either to vindicate my doctrines, or be taught to correct them. These were the motives for my attempting the Volumes I formerly published; and now, from many years experience of their utility to my hearers, as well as from the favourable reception they have met with from the Public, I am induced to give a new edition of this Work, not only,

ly, as I hope, more correct in many parts, but also more complete and comprehensive in its general extent.

AT the first publication of this Work, it was intended chiefly for the use of those Gentlemen who attended my Lectures : Although, even then, for the reasons I have mentioned, it was rendered more full than Text books commonly are ; and, in the repeated Editions I have since had occasion to give, I have been constantly endeavouring to render it more full and comprehensive. In these respects, I hope the present edition will appear to be rendered more fit for general use, and better calculated to afford satisfaction to all those who think they may still receive any instruction from reading on this subject.

WHILE I thus deliver my Work in its now more improved state, with the hopes that it may be of use to others as well as to those who hear my Lectures, I must at the same time observe, that it presents a system which is in many respects new ; and therefore I apprehend it to be not only proper, but necessary, that I should explain here upon what grounds, and from what considerations, this has been attempted.

IN the first place, I apprehend, that, in every branch of science with respect to which new facts are daily acquired, and these consequently giving occasion to new reflections, which correct the principles formerly adopted, it is necessary, from time to time, to reform and renew the whole system, with all the additions and amendments which it has received and is then capable of. That at present this is requisite with regard to the Science of Medicine, will, I believe,

believe, readily occur to every person who at all thinks for himself, and is acquainted with the Systems which have hitherto prevailed. While, therefore, I attempt this, I think it may be allowable, and upon this occasion even proper, that I should offer some remarks on the principal Systems of Medicine which have of late prevailed in Europe, and that I should take notice of the present state of Physic as it is influenced by these. Such remarks, I hope, may be of some use to those who attempt to improve their knowledge by the reading of books.

WHETHER the Practice of Physic should admit of reasoning, or be entirely rested upon experience, has long been, and may still be, a matter of dispute. I shall not, however, at present enter upon the discussion of this ; because I can venture to assert, that, at almost all times, the practice has been, and still is, with every person, founded, more or less, upon certain principles established by reasoning : And therefore, in attempting to offer some view of the present state of Physic, I must give an account of those systems of the principles of the science which have lately prevailed, or may be supposed still to prevail, in Europe.

WHEN, after many ages of darkness, which had destroyed almost the whole of ancient literature, learning was again restored in the fifteenth century ; so, from causes which are well known, it was the system of Galen alone that the Physicians of those days became acquainted with ; and during the course of the sixteenth century, the study of Physicians was almost solely employed in explaining and confirming that system. Early, indeed, in the sixteenth

teenth century, the noted Paracelsus had laid the foundation of a Chemical System which was in direct opposition to that of Galen ; and, by the efficacy of the medicines employed by Paracelsus and his followers, their system came to be received by many : But the systematic Physicians continued to be chiefly Galenists, and kept possession of the Schools till the middle of the seventeenth century. It is not, however, necessary here to enter into any further detail respecting the fate of those two opposite sects ; for the only circumstance concerning them, which I would wish at present to point out, is, that, in the writings of both, the explanations they severally attempted to give of the phænomena of health or sickness turned very entirely upon the state of the fluids of the body.

SUCH was the state of the science of Physic till about the middle of the seventeenth century, when the circulation of the blood came to be generally known and admitted ; and when this, together with the discovery of the receptacle of the chyle, and of the thoracic duct, finally exploded the Galenic system. About the same period, a considerable revolution had taken place in the system of Natural Philosophy. In the course of the seventeenth century, Galileo had introduced mathematical reasoning ; and Lord Bacon having proposed the method of induction, had thereby excited a disposition to observe facts, and to make experiments. These new modes of philosophizing, it might be supposed, would soon have had some influence on the state of medicine ; but the progress of this was slow. The knowledge of the Circulation did indeed necessarily lead to the consideration as well as to a clearer view of the Organic System in animal bodies ; which again led to the
application

application of the mechanical philosophy towards explaining the phænomena of the animal economy ; and it was applied accordingly, and continued, till very lately, to be the fashionable mode of reasoning on the subject. Such reasoning, indeed, must still in several respects continue to be applied : But it would be easy to show, that it neither could, nor ever can be, applied to any great extent in explaining the animal economy ; and we must therefore look for other circumstances which had a greater share in modelling the system of Physic.

WITH this view it may be remarked, that, till the period just now mentioned, every Physician, whether Galenist or Chemist, had been so much accustomed to consider the state and condition of the fluids, both as the cause of disease, and as the foundation for explaining the operation of medicines, that what we may term an HUMORAL PATHOLOGY still continued to make a great part of every system. In these circumstances, it was soon perceived, that chemistry promised a much better explanation than the Galenic or Aristotelian philosophy had done ; and, therefore, while the latter was entirely laid aside, a chemical reasoning was every where received. Lord Bacon, with his usual sagacity, had early observed, that chemistry promised a great number of facts, and he thereby gave it credit ; whilst the Corpuscularian philosophy, restored by Gassendi, readily united with the reasonings of the Chemists ; and the philosophy of Des Cartes readily united with both. From all these circumstances, an Humoral, and chiefly a Chemical Pathology, came to prevail very much till the end of the last century ; and has, indeed,

continued

continued to have a great share in our systems down to the present time.

IT is proper now, however, to observe, that about the beginning of the present century, when every part of science came to be on a more improved and correct footing, there appeared in the writings of STAHL, of HOFFMAN, and of BOERHAAVE, three new, and considerably different, Systems of Physic ; which have ever since had a great share in directing the practice of it. In order, therefore, to give a nearer view of the present state of Physic, I shall offer some remarks upon these different systems ; endeavouring to point out the advantages as well as the disadvantages of each, and how far they still prevail ; or, according to my judgment, deserve to do so.

I SHALL begin with considering that of Dr. Stahl, which I think appeared first, and for a long time after was the prevailing system in Germany.

THE chief and leading principle of this system is, that the rational soul of man governs the whole economy of his body. At all times, Physicians have observed, that the animal economy has in itself a power or condition, by which, in many instances, it resists the injuries which threaten it ; and by which it also, on many occasions, corrects or removes the disorders induced, or arising in it. This power, Physicians very anciently attributed, under a vague idea, to an agent in the system, which they called NATURE ; and the language of a *vis conservatrix et medicatrix naturæ*, has continued in the schools of medicine from the most ancient times to the present.

DR. STAHL has explicitly founded his system on the supposition, that the power of nature, so much talked of, is entirely in the rational soul. He supposes, that, upon many occasions, the soul acts independently of the state of the body ; and that, without any physical necessity arising from that state, the soul, purely in consequence of its intelligence, perceiving the tendency of noxious powers threatening, or of disorders anywise arising in the system, immediately excites such motions in the body as are suited to obviate the hurtful or pernicious consequences which might otherwise take place. Many of my readers may think it was hardly necessary for me to take notice of a system founded upon so fanciful a hypothesis ; but there is often so much seeming appearance of intelligence and design in the operations of the animal economy, that many eminent persons, as Perrault in France, Nichols and Mead in England, Porterfield and Simson in Scotland, and Gaubius in Holland, have very much countenanced the same opinion, and it is therefore certainly entitled to some regard. It is not, however, necessary for me here to enter into any refutation of it. Dr. Hoffman has done this fully, in his *Commentarius de differentia inter Hoffmanni doctrinam medico-mechanicam et G. E. Stahl's medico organicam* ; and both Boerhaave and Haller, though no favourers of materialism, have maintained a doctrine very opposite to that of Stahl.

IN my Physiology I have offered some arguments against the same ; and I shall only add now, that whoever considers what has been said by Dr. Nichols in his *Oratio de Anima Medica*, and by Dr. Gaubius in some parts of his Pathology, must perceive, that the admitting of such a capricious government of the animal economy, as these authors

authors in some instances suppose, would at once lead us to reject all the physical and mechanical reasoning we might employ concerning the human body. Dr. Stahl himself seems to have been aware of this ; and therefore, in his Preface to Juncker's *Conspectus Therapeiæ Specialis*, has acknowledged, that his general principle was not at all necessary ; which is in effect saying that it is not compatible with any system of principles that ought to govern our practice. Upon this footing, I might have at once rejected the Stahlian principle : But it is even dangerous to bring any such principle into view ; for, after all Dr. Stahl had said in the passage just now referred to, I find, that, in the whole of their practice, both he and his followers have been very much governed by their general principle. Trusting much to the constant attention and wisdom of nature, they have proposed the *Art of curing by expectation* ; have therefore, for the most part, proposed only very inert and frivolous remedies ; have zealously opposed the use of some of the most efficacious, such as opium and the Peruvian bark ; and are extremely reserved in the use of general remedies, such as bleeding, vomiting, &c.

ALTHOUGH these remarks, upon a system which may now be considered as exploded or neglected, may seem superfluous ; I have been willing to give these strictures on the Stahlian system, that I might carry my remarks a little farther, and take this opportunity of observing, that, in whatever manner we may explain what have been called the operations of nature, it appears to me, that the general doctrine of *Nature curing diseases*, the so much vaunted *Hippocratic* method of curing, has often had a very baneful influence on the practice of physic ; as either lead-

ing physicians into, or continuing them in, a weak and feeble practice ; and at the same time superseding or discouraging all the attempts of art. Dr. Huxham has properly observed, that even in the hands of Sydenham it had this effect. Although it may sometimes avoid the mischiefs of bold and rash practitioners, yet it certainly produces that caution and timidity which have ever opposed the introduction of new and efficacious remedies. The opposition to chemical medicines in the sixteenth and seventeenth centuries, and the noted condemnation of Antimony by the Medical Faculty of Paris, are to be attributed chiefly to those prejudices, which the physicians of France did not entirely get the better of for near a hundred years after. We may take notice of the reserve it produced in Boerhaave, with respect to the use of the Peruvian Bark. We have had lately published, under the title of *Constitutiones Epidemicæ*, notes of the particular practice of the late Baron Van Swieten ; upon which the editor very properly observes, That the use of the bark, in intermitting fevers, appears very rarely in that practice ; and we know very well where Van Swieten learned that reserve.

I MIGHT go farther, and show how much the attention to the *Autocrateia*, allowed of, in one shape or other, by every sect, has corrupted the practice among all physicians, from Hippocrates to Stahl. It must, however, be sufficiently obvious, and I shall conclude the subject with observing, that although the *vis medicatrix naturæ* must unavoidably be received as a fact ; yet, wherever it is admitted, it throws an obscurity upon our system ; and it is only where the impotence of our art is very manifest and considerable, that we ought to admit of it in practice.

TO finish our remarks upon the Stahlia System, I shall shortly observe, that it did not depend entirely upon the *Autocraeia*, but also supposed a state of the body and diseases, that admitted of remedies ; which, under the power and direction of the soul, acted upon the organization and matter of the body, so as to cure its diseases. Upon this footing, the Stahlia pathology turned entirely upon Plethora and Cacochymy. It was with respect to the former that they especially applied their doctrine of the *Autocraeia* in a very fanatical manner ; and, with respect to the latter, they have been involved in a humoral pathology as much as the systematic physicians who had gone before them, and with a theory so incorrect as not to merit now the smallest attention. After all, I ought not to dismiss the consideration of the Stahlia system, without remarking, that as the followers of this system were very intent upon observing the method of nature, so they were very attentive in observing the phenomena of diseases, and have given us in their writings many facts not to be found elsewhere.

WHILE the doctrines of Stahl were prevailing in the university of Halle, Dr. Hoffman, a professor in the same university, proposed a system that was very different. He received into his system a great deal of the mechanical, Cartesian, and chemical doctrines of the systems which had appeared before : But, with respect to these, it is of no consequence to observe in what manner he modified the doctrines of his predecessors, as his improvements in these respects were no ways considerable, and no part of them now remain ; and the real value of his works, beyond what I am just now going to mention, rests entirely

on the many facts they contain. The merit of Dr. Hoffman and of his works is, that he made, or rather suggested, an addition to the system, which highly deserves our attention. Of this I cannot give a clearer account than by giving it in the author's own words. In his *Medicina Rationalis Systematica*, Tom. III. § 1. chap. 4. he has given his *Genealogia morborum ex turbato solidorum, et fluidorum mechanismo*; and in the 47th and last paragraph of this chapter, he sums up his doctrine in the following words: *Ex hisce autem omnibus uberius haftenus excussis, per quam dilucide apparere arbitror, quod solus SPASMUS et simplex ATONIA, æquabilem, liberum, ac proportionatum sanguinis omnisque generis fluidorum motum, quibus excretionum successus et integritas functionum animi et corporis proxime nititur, turbando ac pervertendo, universam vitalem æconomiam subruant ac destruant; atque hinc universa pathologia longe rectius atque facilius EX VITIO MOTUUM MICROCOSMICORUM IN SOLIDIS, quam EX VARIIS AFFECTIONIBUS VITIOSORUM HUMORUM, deduci atque explicari possit, adeoque omnis generis ægitudines internæ, ad PRÆTERNATURALES GENERIS NERVOSI AFFECTIONES sint referendæ. Etenim læsis quocunque modo, vel nervis per corpus discurrentibus, vel membranosis quibuscvis nervosis partibus, illico motuum anomalix, modo leviores, modo graviores subsequuntur. Deinde attenta observatio docet, motus quoscvis morbosos principaliter sedem figere et tyrannidem exercere in nervosis corporis partibus, cujus generis præter omnes canales, qui systaltico et diastaltico motu pollentes, contentos succos tradunt, universum nimirum intestinorum et ventriculi ab œsophago ad anum canalem, totum systema vasorum arteriosorum, ductuum biliariorum, salivarium, urinariorum et subcutaneorum, sunt quoque membranæ nervico-musculares cerebri et medullæ spinalis, præsertim hæc, quæ dura mater vocatur, organis sensoriiis obductæ,*

obductæ, nec non tunicæ illæ ac ligamenta, quæ ossa cingunt ærtusque firmant. Nam nullus dolor, nulla inflammatio, nullus spasmus, nulla motus et sensus impotentia, nulla febris aut humoris illius excretio, accidit, in qua non hæ partes patiantur. Porro etiam omnes, quæ morbos gignunt causæ, operationem suam potissimam perficiunt in partes motu et sensu præditas, et canales ex his coagmentatos, eorum motum, et cum hoc fluidorum cursum, pervertendo; ita tamen, ut sicuti variæ indolis sunt, sic etiam varie in nerveas partes agant, iisdemque noxam affricent. Demum omnia quoque eximie virtutis medicamenta, non tam in partis fluidas, earum crassum ac intemperiem corrigendo, quam potius in solidas et nervosas, earundem motus alterando ac moderando, suam edunt operationem: De quibus tamen omnibus, in vulgari utique eo recepta morborum doctrina, alium est silentium.

IT is true that Dr. Willis had laid a foundation for this doctrine, in his *Pathologia Cerebri et Nervorum*; and Baglivi had proposed a system of this kind in his *Specimen de fibra motrici et morbosa*. But, in these writers, it was either not extensively applied to diseases, or was still so involved in many physiological errors, that they had attracted little attention; and Dr. Hoffman was the first who gave any tolerably simple and clear system on the subject, or pointed out any extensive application of it to the explanation of diseases.

THERE can be no sort of doubt that the phenomena of the animal economy in health and in sickness, can only be explained by considering the state and affections of the primary moving powers in it. It is to me surprising that physicians were so long of perceiving this, and I think we are therefore particularly indebted to Dr. Hoffman for

putting us into the proper train of investigation ; and it every day appears that Physicians perceive the necessity of entering more and more into this inquiry. It was this, I think, which engaged Dr. Kaaw Boerhaave to publish his work intitled *Impetum faciens* ; as well as Dr. Gaubius to give the Pathology of the *Solidum vivum*. Even the Baron Van Swieten has upon the same view thought it necessary, in at least one particular, to make a very considerable change in the doctrine of his master, as he has done in his Commentary upon the 755th Aphorism. Dr. Haller has advanced this part of science very much by his experiments on irritability and sensibility. In these and in many other instances, particularly in the writings of Mr. Barthez of Montpelier, of some progress in the study of the affections of the Nervous System, we must perceive how much we are indebted to Dr. Hoffman for his so properly beginning it. The subject, however, is difficult : The laws of the Nervous System, in the various circumstances of the animal economy, are by no means ascertained ; and, from want of attention and observation with the view to a system on this subject, the business appears to many as an inexplicable mystery. There is no wonder, therefore, that, on such a difficult subject, Dr. Hoffman's system was imperfect and incorrect ; and has had less influence on the writings and practice of Physicians since his time, than might have been expected. He himself has not applied his fundamental doctrine so extensively as he might have done ; and he has every where intermixed an Humoral Pathology as incorrect and hypothetical as any other. Though he differed from his colleague Dr. Stahl in the fundamental doctrines of his system, it is but too evident that he was very much infected with the Stahlian doctrines

doctrines of Plethora and Cacochymy, as may be observed throughout the whole course of his work ; and particularly in his chapter *De morborum generatione ex nimia sanguinis quantitate et humorum impuritate*.

BUT it is needless for me to dwell any longer upon the system of Hoffman ; and I am next to offer some remarks on the system of Dr. Boerhaave the cotemporary of both the other Systematics, and who, over all Europe, and especially in this part of the world, gained higher reputation than either of the others.

DR. BOERHAAVE was a man of general erudition ; and, in applying to medicine, he had carefully studied the auxiliary branches of Anatomy, Chemistry, and Botany, so that he excelled in each. In forming a System of Physic, he seems to have studied diligently all the several writings of both ancient and modern physicians ; and, without prejudice in favour of any former systems, he endeavoured to be a candid and genuine eclectic. Possessed of an excellent systematic genius, he gave a system superior to any that had ever before appeared. As in the great extent, and seemingly perfect consistency, of system, he appeared to improve and refine upon every thing that had before been offered ; and as in his Lectures he explained his doctrines with great clearness and elegance ; he soon acquired a very high reputation, and his system was more generally received than any former had been since the time of Galen. Whoever will consider the merits of Dr. Boerhaave, and can compare his system with that of former writers, must acknowledge that he was very justly esteemed, and gave a system which was at that time deservedly valued.

BUT, in the progress of an inquisitive and industrious age, it was not to be expected that any system should last so long as Boerhaave's has done. The elaborate Commentary of Van Swieten on Boerhaave's system of practice, has been only finished a few years ago ; and though this Commentator has added many facts, and made some corrections, he has not, except in the particular mentioned above, made any improvement in the general system. It is even surprising that Boerhaave himself, though he lived near forty years after he had first formed his system, had hardly in all that time made any corrections of it or additions to it ; the following is the most remarkable. In Aphorism 755, the words *forte et nervosi, tam cerebri quam cerebelli cordi destinati inertia*, did not appear in any edition before the fourth ; and what a difference of system this points at, every physician must perceive.

WHEN I first applied to the study of Physic, I learned only the system of Boerhaave ; and even when I came to take a Professor's chair in this university, I found that system here in its entire and full force ; and as I believe it still subsists in credit elsewhere, and that no other system of reputation has been yet offered to the world, I think it necessary for me to point out particularly the imperfections and deficiencies of the Boerhaavian system, in order to show the propriety and necessity of attempting a new one.

TO execute this, however, so fully as I might, would lead me into a detail that can hardly be admitted of here ; and I hope it is not necessary, as I think, that every intelligent person, who has acquired any tolerable knowledge of the present state of our science, must, in many instances, perceive

perceive its imperfections. I shall therefore touch only upon the great lines of this system ; and from the remarks I am to offer, trust that both the mistakes and deficiencies, which run through the whole of his works will appear.

DR. BOERHAAVE's treatise of the diseases of the simple solid, has the appearance of being very clear and consistent, and was certainly considered by him as a fundamental doctrine ; but, in my apprehension, it is neither correct nor extensively applicable. Not to mention the useless, and perhaps erroneous, notion of the composition of earth and gluten ; nor his mistake respecting the structure of compound membranes ; nor his inattention to the state of the cellular texture ; all of them circumstances which render his doctrine imperfect ; I shall insist only upon the whole being very little applicable to the explaining the phenomena of health or sickness. The laxity or rigidity of the simple solid, does, indeed, take place at the different periods of life, and may perhaps, upon other occasions, occur as the cause of disease : But I presume, that the state of the simple solid is, upon few occasions, either changeable or actually changed ; and that, in ninety nine cases of an hundred, the phenomena attributed to such a change, do truly depend on the state of the *solidum vivum* ; a circumstance which Dr. Boerhaave has hardly taken notice of in any part of his works. How much this shows the deficiency and imperfection of his system, I need not explain. The learned work of Dr. Gaubius, above referred to, as well as many other treatises of late authors, point out sufficiently the defects and imperfections of Boerhaave on this subject.

AFTER Dr. Boerhaave has considered the diseases of the solids, he in the next place attempts to explain the more

simple diseases of the fluids ; and there, indeed, he delivers a more correct doctrine of acid and alkali than had been given before : But, after all, he has done it very imperfectly. We have, indeed, since his time, acquired more knowledge upon the subject of digestion ; and so much as to know, that a great deal more is yet necessary to enable us to understand in what manner the animal fluids are formed from the aliments taken in. And although Dr. Boerhaave has fallen into no considerable error with respect to a morbid acidity in the stomach, he could not possibly be complete upon that subject ; and his notion of the effects of acidity in the mass of blood seems to have been entirely mistaken, and is indeed not consistent with what he himself has delivered elsewhere.

HIS doctrine of alkali is somewhat better founded, but is probably carried too far ; and the state of alkalescency and putrefaction, as well as all the other changes which can take place in the condition of animal fluids, are particulars yet involved in great obscurity, and are therefore still subjects of dispute.

THERE is another particular, in which Boerhaave's doctrine concerning the fluids appears to me imperfect and unsatisfactory ; and that is, in his doctrine *de Glutinoso spontaneo*. The causes which he has assigned for it are by no means probable, and the actual existence of it is seldom to be proved. Some of the proofs adduced for the existence of the *phlegma calidum*, are manifestly founded on a mistake with respect to what has been called the inflammatory crust, (see Van Swieten's Commentary, page 96) ; and the many examples given by Boerhaave of a *glutinosum* appearing in the human body, (*Aph.* 75.) are all of them
nothing

nothing more than instances of collections or concretions found out of the course of the circulation.

IF, then, we consider the imperfection of Dr. Boerhaave's doctrine with respect to the state and various condition of the animal fluids ; and if at the same time we reflect how frequently he and his followers have employed the supposition of an acrimony or lentor of the fluids, as causes of disease, and for directing the practice ; we must, as I apprehend, be satisfied, that his system is not only deficient and incomplete, but fallacious and apt to mislead. Although it cannot be denied, that the fluids of the human body suffer various morbid changes ; and that upon these, diseases may primarily depend ; yet I must beg leave to maintain, that the nature of these changes is seldom understood, and more seldom still is it known when they have taken place : That our reasonings concerning them, have been, for the most part, purely hypothetical ; have therefore contributed nothing to improve, and have often misled the practice of physic. In this, particularly, they have been hurtful, that they have withdrawn our attention from, and prevented our study of, the motions of the animal system, upon the state of which the phenomena of diseases do more certainly and generally depend. Whoever, then, shall consider the almost total neglect of the state of the moving powers of the animal body, and the prevalence of an hypothetical humoral pathology, so conspicuous in every part of the Boerhaavian System, must be convinced of its very great defects, and perceive the necessity of attempting one more correct.

AFTER giving this general view, it is not requisite to enter into particulars : But, I believe, there are very few
pages

pages of his aphorisms in which there does not occur some error or defect ; although, perhaps, not to be imputed to the fault of Boerhave, so much as to this, that since his time a great collection of new facts has been acquired by observation and experiment. This indeed, affords the best and most solid reason for attempting a new system : For when many new facts have been acquired, it becomes requisite that these should be incorporated into a system, whereby not only particular subjects may be improved, but the whole may be rendered more complete, consistent, and useful. Every system, indeed, must be valuable in proportion to the number of facts that it embraces and comprehends ; and Mons. Quesney could not pay a higher compliment to the System of Boerhaave, than by saying that it exhibited *La medicine collective*.

BUT here it will, perhaps, be suggested to me, that the only useful work on the subject of Physic, is the making a collection of all the facts that relate to the art, and therefore of all that experience has taught us with respect to the cure of diseases. I agree entirely in the opinion ; but doubt if it can ever be properly accomplished, without aiming at some system of principles, by a proper induction and generalisation of facts : At least I am persuaded that it can be done not only very safely, but most usefully in this way. This, however, must be determined by a trial. I know that the late Mr. Licutaud has attempted a work on the plan of collecting facts without any reasoning concerning their causes : And while I am endeavouring to give some account of the present state of Physic, I cannot dismiss the subject without offering some remarks upon the promising *Synopsis universæ medicina*,
composed

composed by the first physician of a learned and ingenious nation.

IN this work there are many facts and much observation from the Author's own experience, which may be useful to those who have otherwise acquired some knowledge and discernment ; but, throughout the whole work, there is such total want of method, arrangement, system, or decision, that, in my humble opinion, it can be of little use, and may prove very perplexing to those who are yet to learn. The distinction of the genera of diseases, the distinction of the species of each, and often even that of the varieties, I hold to be a necessary foundation of every plan of Physic, whether Dogmatical or Empirical. But very little of this distinction is to be found in the work of Mr. Lieutaud ; and in his preface he tells us, that he meant to neglect such *arguta sedulitas*. And indeed his method of managing his subject must certainly interrupt and retard all methodical nosology. His arrangement of diseases is according to no affinity, but that of the slightest and uninstruative kind, the place of the body which they happen to affect. His *Generalia et incertæ sedis*, have hardly any connexion at all ; the titles *Rheumatisms*, *Hypochondriasis*, *Hydrops*, follow one another. When he does attempt any general doctrine, it is not till long after he has treated of the widely scattered particulars. Under each particular title which he assumes, he has endeavoured to enumerate the whole of the symptoms that ever appeared in a disease under that title ; and this without aiming at any distinction between the essential and accidental symptoms, or marking the several combinations under which these symptoms do for the most part steadily appear.

appear. From the concurrence of accidental symptoms, the variety of the same disease is frequently considerable, a circumstance necessarily perplexing and distracting to young practitioners; but it seems strange to me, that an experience of thirty years, in considerable practice, could do nothing to relieve them.

MR. LIEUTAUD has at the same time increased the confusion that must arise from this want of distinction, by his considering as primary diseases, what appear to me to be the symptoms, effects, and sequels, of other diseases only. Of this I think the *Æstus morbosus*, *Virum exolutio*, *Dolores*, *Stagnatio sanguinis*, *Purulentia*, *Tremor*, *Peruigilium*, *Raucedo*, *Suffocatio*, *Vomica*, *Empyema*, *Singultus*, *Vomitus*, *Dolor Stomachi*, *Tenesmus*, all treated of under separate titles, are examples. A general symptomatologia may be a very useful work, with a view to a System of Pathology; but, with a view to practice without any System, it must have bad effects, as leading only to a palliative practice, and diverting from the proper efforts towards obtaining a radical cure. Mr. Lieutaud, indeed, has endeavoured to exhibit the symptoms above mentioned as so many *primary diseases*: But he has seldom succeeded in this; and, in delivering the practice, he commonly finds it necessary to consider them as symptoms, and that not without some theory, implied or expressed, with respect to their proximate causes. His title of *Dolores* may be taken as an example of this; and from which it may be readily perceived how far such treatises can be really useful.

IN establishing a proper pathology, there is nothing that has been of more service than the Dissection of morbid bodies.

bodies. Mr. Lieutaud has been much and most commendably employed in this way, and in this Synopsis he has endeavoured to communicate his knowledge on the subject ; but, in my humble opinion, he has seldom done it in a manner that can be useful. In the same way that he has delivered the symptoms of diseases without any instructive arrangement ; so, on the subject of the appearances after death, he has mentioned every morbid appearance that had ever been observed after the disease of which he is then treating ; but these appearances are strangely huddled together, without any notice taken of those which belong to one set of symptoms or to another ; and, with regard to the whole, without any attempt to distinguish between the causes of diseases and the causes of death ; although the want of such distinction is the well known ground of fallacy upon this subject. I take for an example, the appearances mentioned as having been observed after dropsy. Here morbid appearances, found in every part of the body, in every cavity of it, and in every viscus contained in these cavities, are enumerated ; but which of these morbid states are more frequent or more rare, and which had been more particularly connected with the different causes, or with the different state of symptoms previously recited, we are not informed, nor has he enabled us to discover. In short, the dissection of morbid bodies has been, and may be, highly useful ; but in order to be so, it must be under a different management from what we find, either in this Synopsis, or even in the *Historia Anatomico-medica*.

I CANNOT dismiss this subject without remarking, that the dissection of morbid bodies, is chiefly valuable upon
account

account of its leading us to discover the proximate causes of diseases ; and the great and valuable work of the illustrious Morgagni, is properly intitled *De sedibus et causis*. It may well seem surprising, then, that Lientaud should find the whole of proximate causes *atra caligine mersas* ; and that he should never have thought of applying his dissection towards the ascertaining at least some of these.

BUT let me now proceed to consider the important part of every practical work, and of this *Synopsis universæ medicinæ* ; that is, the method of curing diseases.

HERE, again, upon the same plan as in giving the histories of disease, the method of cure is delivered, by enumerating the whole of the remedies that have ever been employed in a disease under the title prefixed ; without assigning the species, or the circumstances to which the remedies, though of a very different and sometimes opposite nature, are peculiarly adapted. On the subject of Asthma, he very justly observes that physicians have been to blame in confounding under this title, almost all the species of Dyspnœa ; and he himself very properly considers Asthma as a disease distinct from all the other cases of Dyspnœa. Still, however, he considers Asthma as of many different species, arising from many different causes, which, till we understand better, we cannot attempt to remove. Notwithstanding all this, he proceeds to deliver a very general cure. *Parum abest*, says he, *quin specifici titulo gaudeant pectoralia, vulneraria, et incidentia* ! But from such language I receive no clear idea ; nor can I obtain any clear direction from the enumeration of his medicines. *Baccæ juniperi, gummi tragacanthum vel ammoniacum, sapo, aqua picea, terebinthina, &c. quæ tamen haud indiscriminatum sunt usurpanda, sed*

pro re nata, delectu opus est. Very justly indeed, *delectu opus est* ; but here, as in many other instances, he gives us no sort of assistance.

FROM his endeavours, though not always successful, to neglect all system, his practice is generally delivered in a very indecisive manner ; or, what has the same effect, in a way so conditional as will render it always difficult, and often impossible, for a young practitioner to follow him. Let us take, for example, his cure of Dropsy. “ The cure “ may be begun by bloodletting in certain conditions ; “ *but, in others, it cannot be employed without danger.* It “ gives relief in difficult breathing ; *but, after it is practis-* “ *ed, the symptoms are aggravated, and rendered more obsti-* “ *nate.* It is not to be concealed that some persons have “ been cured by repeated bloodlettings, or spontaneous “ hæmorrhagies ; *but it is at the same time known, that such* “ *a remedy inopportunely employed, has in many instances hast-* “ *ened on the fatal event.*”

IN the same manner he treats of vomiting, purging, sweating, and the use of mineral waters ; but I must confess, that he has no where removed any of my doubts or difficulties, and indeed he has sometimes increased them. He says, that hepatics, or aperients, such as the *lingua cervina, herbæ capillares, &c.* deserve commendation ; but that, when the disease has arisen to a certain degree, they have been, *for the most part, found to be useless.* He observes, that the powder of toads given in wine, to the quantity of a scruple or more, has succeeded with fevers.

SUCH are, commonly, the methods of cure delivered by Mr. Lieutaud, *longiori et forte felicissima praxi edoctus.*

IT would be tedious to enter further into that detail, which a criticism of this immethodical and uninstruative work might lead me into ; but, if the bounds proper for this preface did not prevent me, I would particularly show that the work is far from being free from those reasonings which the author pretends to avoid, and would affect even to despise. He still holds the doctrines of the CONCOCTION and CRITICAL EVACUATION of MORBIFIC MATTER ; doctrines depending upon subtle theories, and which, in my opinion, can in nowise be ascertained as matters of fact. Mr. Lieutaud likewise is still very much upon the old plan of following NATURE, and therefore gives often what I consider as a feeble and inert practice. The *humectantia, diluentia, demulcentia, et temperantia*, are with him very universal remedies, and often those which alone are to be employed.

THE mention of these medicines might lead me to take notice of Mr. Lieutaud's second volume, in which, *ab insula remediorum farragine alienus*, he promises a great reformation upon the subject ; but this falls so far short of the idea of British physicians, that I need not make any remarks upon it. With respect to his list of simples, or *Emporetica*, as he is pleased to term them, an English apothecary would smile at it ; and with respect to his *officinalia*, I believe they are to be found no where but in the *Codex Medicamentarius* of Paris ; and in his *Magistralia* his doses are generally such as the most timid practitioner of this country would hardly descend to, and such as none of our practitioners of experience would depend upon. In short, the whole of the work, both with respect to the theories with which it abounds, and to the facts which it gives,

will.

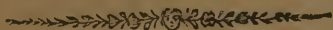
will not, in my apprehension, bear any serious criticism. But I must conclude ; and shall only say further, that such as I have represented it, is this work, executed by a man of the first rank in the profession. It is indeed for that reason I have chosen it as the example of a work, upon the plan of giving facts only, and of avoiding the study or even the notice of the proximate causes of diseases ; and with what advantage such a plan is pursued, I shall leave my readers to consider.

IN the following treatise I have followed a different course. I have endeavoured to collect the facts relative to the diseases of the human body, as fully as the nature of the work and the bounds necessarily prescribed to it would admit : But I have not been satisfied with giving the facts, without endeavouring to apply them to the investigation of proximate causes, and upon these to establish a more scientific and decided method of cure. In aiming at this, I flatter myself that I have avoided hypothesis, and what have been called *theories*. I have, indeed, endeavoured to establish many general doctrines, both physiological ; and pathological ; but I trust that these are only a generalisation of facts, or conclusions from a cautious and full induction ; and if any one shall refuse to admit, or directly shall oppose, my general doctrines, he must do it by showing that I have been deficient or mistaken in assuming and applying facts. I have, myself, been jealous of my being sometimes imperfect in these respects ; but I have generally endeavoured to obviate the consequences of this, by proving, that the proximate causes which I have assigned, are true in fact, as well as deductions from any reasoning that I may seem to have employed. Further, to obviate any dangerous fallacy in proposing a method of cure, I
have

have always been anxious to suggest that which, to the best of my judgment, appeared to be the method approved of by experience, as much as it was the consequence of system.

UPON this general plan I have endeavoured to form a system of physic that should comprehend the whole of the facts relating to the science, and that will, I hope, collect and arrange them in better order than has been done before, as well as point out in particular those which are still wanting to establish general principles. This which I have attempted, may, like other systems, hereafter suffer a change ; but I am confident that we are at present in a better train of investigation than physicians were in before the time of Dr. Hoffman. The affections of the motions and moving powers of the animal economy, must certainly be the leading inquiry in considering the diseases of the human body. The inquiry may be difficult ; but it must be attempted, or the subject must be deserted altogether. I have, therefore, assumed the general principles of Hoffman, as laid down in the passage which I have quoted above ; and if I have rendered them more correct, and more extensive in their application ; and, more particularly, if I have avoided introducing the many hypothetical doctrines of the Humoral Pathology which disfigured both his and all the other systems which have hitherto prevailed ; I hope I shall be excused for attempting a system, which upon the whole may appear new.

EDINBURGH, Nov. 1783.



P A R T I.

O F P Y R E X I Æ,

O R

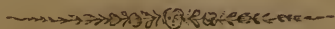
F E B R I L E D I S E A S E S.







FIRST LINES
OF THE
PRACTICE OF PHYSIC.



Introduction.

I.



IN teaching the PRACTICE of PHYSIC, we endeavour to give instruction for *discerning, distinguishing, preventing, and curing* diseases, as they occur in particular persons.

II.

The art of DISCERNING and DISTINGUISHING diseases, may be best attained by an accurate

curate and complete observation of their phenomena, as these occur in concurrence and in succession, and by constantly endeavouring to distinguish the peculiar and inseparable concurrence of symptoms, to establish a METHODICAL NOSOLOGY, or an arrangement of diseases according to their genera and species, founded upon observation alone, abstracted from all reasoning. Such an arrangement I have attempted in another work, to which in the course of the present I shall frequently refer.

III.

The PREVENTION of diseases depends upon the knowledge of their remote causes; which is partly delivered in the general Pathology, and partly to be delivered in this treatise.

IV.

The CURE of diseases is chiefly, and almost unavoidably, founded in the knowledge of their proximate causes. This requires an acquaintance with the Institutions of Medicine; that is, the knowledge of the structure, action, and functions of the human body; of the several changes which it may undergo; and of the several powers by which it can be changed. Our knowledge of these particulars,

ticulars, however, is still incomplete, is in many respects doubtful, and has been often involved in mistake and error. The doctrine, therefore, of proximate causes, founded upon that knowledge, must be frequently precarious and uncertain. It is, however, possible for a judicious physician to avoid what is vulgarly called theory, that is, all reasoning founded upon hypothesis, and thereby many of the errors which have formerly taken place in the Institutions of Medicine. It is possible also for a person who has an extensive knowledge of the facts relative to the animal economy in health and in sickness, by a cautious and complete induction, to establish many general principles which may guide his reasoning with safety; and while, at the same time, a physician admits as a foundation of practice those reasonings only which are simple, obvious and certain, and for the most part admits as proximate causes those alone that are established as matters of fact rather than as deductions of reasoning, he may with great advantage establish a system of practice chiefly founded on the doctrine of proximate causes. But when this cannot be done with sufficient certainty, the judicious and prudent physician will have recourse to EXPERIENCE alone; always, however, aware of the hitherto incomplete and fallacious state of Empiricism.

V.

With a strict attention to these considerations in the whole of the following Treatise, I proceed to treat of particular diseases in the order of my Methodical Nosology.



P A R T I.

Of Pyrexiae, or Febrile Diseases.

VI.



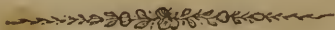
YREXIÆ, or febrile diseases, are distinguished by the following appearances. After beginning with some degree of cold shivering, they show some increase of heat, and an increased frequency of pulse, with the interruption and disorder of several functions, particularly some diminution of strength in the animal functions.

VII.

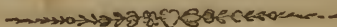
Of these Pyrexiae I have formed a class, and have subdivided it into the five orders of FEVERS, INFLAMMATIONS, ERUPTIONS, HEMORRHAGIES, and FLUXES. See Synopsis Nosologiæ Methodicæ, Edit. 3. 1780.



B O O K I:



O F F E V E R S.



C H A P. I.

O F T H E P H E N O M E N A O F F E V E R S.

VIII.

THOSE diseases are more strictly called FEVERS, which have the general symptoms of pyrexia, without having alongſt with them any topical affection that is eſſential and primary, ſuch as the other orders of the Pyrexiaë always have.

IX.

Fevers, as differing in the number and variety of their ſymptoms, have been very properly conſidered as of diſtinct genera and ſpecies. But we ſuppoſe, that there are certain circumſtances in common to all the diſeaſes comprehended under this order, which are therefore thoſe eſſentially neceſſary to, and properly

properly constituting the nature of fever. It is our business especially, and in the first place, to investigate these ; and I expect to find them as they occur in the paroxysm, or fit, of an intermittent fever, as this is most commonly formed.

X.

The phenomena to be observed in such a paroxysm are the following. The person is affected, first, with a languor or sense of debility, a sluggishness in motion, and some uneasiness in exerting it, with frequent yawning and stretching. At the same time, the face and extremities become pale ; the features shrink ; the bulk of every external part is diminished ; and the skin, over the whole body, appears constricted, as if cold had been applied to it. At the coming on of these symptoms, some coldness of the extremities, though little taken notice of by the patient, may be perceived by another person. At length, the patient himself feels a sensation of cold, commonly first in his back, but, from thence, passing over the whole body ; and now his skin feels warm to another person. The patient's sense of cold increasing, produces a tremor in all his limbs, with frequent successions or rigors of the trunk of the body. When this sense of cold, and its effects, have continued for some time, they become less violent, and are alternated with warm flushings. By degrees, the cold

goes off entirely ; and a heat, greater than natural, prevails, and continues over the whole body. With this heat, the colour of the skin returns, and a preternatural redness appears, especially in the face. Whilst the heat and redness come on, the skin is relaxed and smoothed, but, for some time, continues dry. The features of the face, and other parts of the body, recover their usual size, and become even more turgid. When the heat, redness, and turgescence have increased and continued for some time, a moisture appears upon the forehead, and by degrees becomes a sweat, which gradually extends downwards over the whole body. As this sweat continues to flow, the heat of the body abates ; the sweat, after continuing some time, gradually ceases ; the body returns to its usual temperature ; and most of the functions are restored to their ordinary state.

XI.

This series of appearances gives occasion to divide the paroxysm into three different stages ; which are called the COLD, the HOT, and the SWEATING STAGES or *Fits*.

In the course of these, considerable changes happen in the state of several other functions, which are now to be mentioned.

XII.

Upon the first approach of languor, the pulse becomes sometimes slower, and always weaker

weaker than before. As the sense of cold comes on, the pulse becomes smaller, very frequent, and often irregular. As the cold abates, and the heat comes on, the pulse becomes more regular, hard, and full; and in these respects, increases till the sweat breaks out. As the sweat flows, the pulse becomes softer, and less frequent, till the sweat ceasing altogether, it returns to its usual state.

XIII.

The respiration also suffers some changes. During the cold stage, the respiration is small, frequent, and anxious, and is sometimes attended with a cough; as the hot stage comes on, the respiration becomes fuller and more free; but continues still frequent and anxious, till the flowing of the sweat relieves the anxiety, and renders the breathing less frequent and more free. With the ceasing of the sweat, the breathing returns to its ordinary state.

XIV.

The natural functions also suffer a change. Upon the approach of the cold stage, the appetite for food ceases, and does not return till the paroxysm be over, or the sweat has flowed for some time. Generally, during the whole of the paroxysm, there is not only a want of appetite, but an aversion from all solid, and especially animal food. As the cold stage ad-

vances, there frequently comes on a sickness and nausea, which often increase to a vomiting of a matter that is for the most part bilious. This vomiting commonly puts an end to the cold stage, and brings on the hot. As the hot stage advances, the nausea and vomiting abate ; and when the sweat breaks out, they generally cease altogether.

XV.

A considerable degree of thirst is commonly felt during the whole course of the paroxysm. During the cold stage, the thirst seems to arise from the dryness and clamminess of the mouth and fauces ; but, during the hot stage, from the heat which then prevails over the whole body ; and, as the sweat flows, the mouth becomes moister, and the thirst, together with the heat, gradually abates.

XVI.

In the course of a paroxysm, there is often a considerable change in the state of the secretions. The circumstances just now mentioned show it in the secretion of the saliva and mucus of the mouth ; and it is still more remarkable with respect to the urine. During the cold stage, the urine is almost colourless, and without cloud or sediment. In the hot stage, it becomes high coloured, but is still without sediment. After the sweat has
flowed

flowed freely, the urine deposits a sediment, commonly lateritious, and continues to do so for some time after the paroxysm is over.

XVII.

Excepting in certain uncommon cases which are attended throughout with a diarrhœa, stools seldom occur till towards the end of a paroxysm, when commonly a stool happens, and which is generally of a loose kind.

XVIII.

Analogous to these changes in the state of the secretions, it frequently happens, that tumours subsisting on the surface of the body, suffer, during the cold stage of fevers, a sudden and considerable detumescence; but generally, though not always, the tumours return to their former size during the sweating stage. In like manner, ulcers are sometimes dried up during the cold stage; and return again to discharge matter during the sweating stage, or after the paroxysm is over.

XIX.

Certain changes appear also in sensation and thought. During the cold stage, the sensibility is often greatly impaired; but when the hot stage is formed, the sensibility is recovered, and often considerably increased.

XX.

With respect to the intellectual functions, when the cold stage comes on, attention and recollection become difficult, and continue more or less so during the whole paroxysm. Hence some confusion of thought takes place, and often arises to a delirium, which sometimes comes on at the beginning of the cold stage, but more frequently not till the hot stage be formed.

XXI.

It belongs also to this place to remark that the cold stage sometimes comes on with a drowsiness and stupor, which often increase to a degree that may be called comatose, or apoplectic.

XXII.

We have still to add, that sometimes, early in the cold stage, a headach comes on; but which, more commonly, is not felt till the hot stage be formed, and then is usually attended with a throbbing of the temples. The headach continues till the sweat breaks out; but as this flows more freely, that gradually goes off. At the same time with the headach, there are commonly pains of the back, and of some of the great joints; and these pains have the same course with the headach.

XXIII.

XXIII.

These are nearly the whole, and are at least the chief of the phenomena which more constantly appear in the paroxysm of an intermittent fever ; and we have pointed out their ordinary concourse and succession. With respect to the whole of them, however, it is to be observed, that, in different cases, the several phenomena are in different degrees ; that the series of them is more or less complete ; and that the several parts or stages in the time they occupy, are in a different proportion to one another.

XXIV.

It is very seldom that a fever consists of a single paroxysm, such as we have now described ; and it more generally happens, after a certain length of time has elapsed from the ceasing of the paroxysm, that the same series of phenomena again arises, and observes the same course as before ; and these states of FEVER and APYREXIA often continue to alternate with one another for many times. In such cases, the length of time from the end of one paroxysm to the beginning of another, is called an INTERMISSION ; and the length of time from the beginning of one paroxysm to the beginning of another next succeeding, is called an INTERVAL.

XXV.

XXV.

When the disease consists of a number of paroxysms, it is generally to be observed, that the intervals between them are nearly equal ; but these intervals are of different lengths in different cases. The most usual interval is that of forty eight hours, which is named the TERTIAN period. The next most common is that of seventy two hours, and is named the QUARTAN period. Some other intervals also are observed, particularly one of twenty four hours, named therefore the QUOTIDIAN ; and the appearance of this is pretty frequent. But all other intervals longer than that of the quartan are extremely rare, and probably are only irregularities of the tertian or quartan periods..

XXVI..

The paroxysms of pure intermittent fevers are always finished in less than twenty four hours ; and though it happens that there are fevers which consist of repeated paroxysms, without any entire intermission between them ; yet in such cases it is observed, that, though the hot and sweating stages of the paroxysm do not entirely cease before the twenty four hours from their beginning have expired, they suffer, however, before that time, a considerable abatement or REMISSION of their violence ;

lence ; and, at the return of the quotidian period, a paroxysm is in some shape renewed, which runs the same course as before. This constitutes what is called a REMITTENT FEVER.

XXVII.

When in these remittents the remission is considerable, and the return of a new paroxysm is distinctly marked by the symptoms of a cold stage at the beginning of it ; such fevers retain strictly the appellation of REMITTENTS. But when it happens, as it does in certain cases, that the remission is not considerable, is perhaps without sweat, and that the returning paroxysm is not marked by the most usual symptoms of a cold stage, but chiefly by the aggravation or EXACERBATION of a hot stage, the disease is called a CONTINUED FEVER.

XXVIII.

In some cases of continued fever, the remissions and exacerbations are so inconsiderable as not to be easily observed or distinguished ; and this has led physicians to imagine, that there is a species of fever subsisting for several days together, and seemingly consisting of one paroxysm only. This they have called a CONTINENT FEVER ; but, in a long course of practice, I have not had an opportunity of observing such a fever.

XXIX.

XXIX.

It is, however, to be observed here, that the fevers of a continued form are to be distinguished from one another ; and that, while some of a very continued form do still belong to the section of intermittents, there are others which, though still consisting of separate and repeated paroxysms, yet, as different by their causes and circumstances from intermittents, are to be distinguished from the whole of these, and are more strictly to be called and considered as CONTINUED. Such are most of those which have been commonly supposed to be CONTINENT ; and those which by most writers have been simply named CONTINUED ; and which term I have employed as the title of a section, to be distinguished from that of INTERMITTENT.

I shall here add the marks by which, in practice, these different continued fevers may be distinguished from one another.

Those fevers of a continued form, which, however, still belong to the section of Intermittents, may be distinguished by their having passed from an intermittent or remittent form, to that of a continued ; by their showing some tendency to become intermittent, or at least remittent ; by their being known to have been occasioned by marsh miasmata ; and, for the most part, by their having but one paroxysm, or one exacerbation and remission, in the course of twenty four hours.

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On the other hand, Continued Fevers, to be more strictly so called, may be distinguished by their showing little tendency to become intermittent or remittent in any part of their course, and especially after the first week of their continuance ; by their being occasioned by human contagion, at least by other causes than the marsh miasmata ; and by their having pretty constantly an exacerbation and remission twice in the course of every twenty four hours. In both cases, the knowledge of the nature of the epidemic for the time prevailing, may have a great share in determining the nature of the particular fever.

XXX.

With respect to the form, or TYPE, of fevers, this further may be observed, That the quartan, while it has the longest interval, has, at the same time, the longest and most violent cold stage ; but, upon the whole, the shortest paroxysm : That the tertian, having a shorter interval than the quartan, has, at the same time, a shorter and less violent cold stage ; but a longer paroxysm : And, lastly, that the quotidian, with the shortest interval, has the least of a cold stage, but the longest paroxysm.

XXXI.

The type of fevers is sometimes changed in their course. When this happens, it is generally

ally in the following manner : Both tertians and quartans change into quotidians, quotidians into remittents, and these last become often of the most continued kind. In all these cases, the fever has its paroxysms protracted longer than usual, before it changes into a type of more frequent repetition.

XXXII.

From all this a presumption arises, that every fever consists of repeated paroxysms ; differing from others chiefly in the circumstances and repetition of the paroxysms ; and, therefore, that it was allowable for us to take the paroxysm of a pure intermittent as an example and model of the whole.



C H A P. II.

OF THE PROXIMATE CAUSE OF FEVER.

XXXIII.

THE proximate cause of fever seems hitherto to have eluded the research of physicians ; and I shall not pretend to ascertain it in a manner that may remove every difficulty ; but I shall endeavour to make an approach towards it, and such as, I hope, may be of use in conducting the practice in this disease ;

disease ; while at the same time I hope to avoid several errors which have formerly prevailed on this subject.

XXXIV.

As the hot stage of fever is so constantly preceded by a cold stage, we presume that the latter is the cause of the former ; and, therefore, that the cause of the cold stage is the cause of all that follows in the course of the paroxysm. See Boerh. Aph. 756.

XXXV.

To discover the cause of the cold stage of fevers, we may observe, that it is always preceded by strong marks of a general debility prevailing in the system. The smallness and weakness of the pulse, the paleness and coldness of the extreme parts, with the shrinking of the whole body, sufficiently show that the action of the heart and larger arteries is, for the time, extremely weakened. Together with this, the languor, inactivity, and debility of the animal motions, the imperfect sensations, the feeling of cold, while the body is truly warm, and some other symptoms, all show that the energy of the brain is, on this occasion, greatly weakened ; and I presume, that, as the weakness of the action of the heart can hardly be imputed to any other cause, this weakness also is a proof of the diminished energy of the brain.

XXXVI.

XXXVI.

I shall hereafter endeavour to show, that the most noted of the remote causes of fever, as contagion, miasmata, cold, and fear, are of a sedative nature; and therefore render it probable that a debility is induced. Likewise, when the paroxysms of a fever have ceased to be repeated, they may again be renewed, and are most commonly renewed by the application of debilitating powers. And, further, the debility which subsists in the animal motions and other functions through the whole of fever, renders it pretty certain that sedative or debilitating powers have been applied to the body.

XXXVII.

It is therefore evident, that there are three states which always take place in fever; a state of debility, a state of cold, and a state of heat; and as these three states regularly and constantly succeed each other in the order we have mentioned them, it is presumed that they are in the series of cause and effect with respect to one another. This we hold as a matter of fact, even although we should not be able to explain in what manner or by what mechanical means these states severally produce each other.

XXXVIII.

XXXVIII.

How the state of debility produces some of the symptoms of the cold stage, may perhaps be readily explained ; but how it produces all of them, I cannot explain otherwise than by referring the matter to a general law of the animal economy, whereby it happens, that powers which have a tendency to hurt and destroy the system, often excite such motions as are suited to obviate the effects of the noxious power. This is the *VIS MEDICATRIX NATURÆ*, so famous in the schools of physic ; and it seems probable, that many of the motions excited in fever are the effects of this power.

XXXIX.

That the increased action of the heart and arteries, which takes place in the hot stage of fevers, is to be considered as an effort of the *vis medicatrix naturæ*, has been long a common opinion among physicians ; and I am disposed to assert, that some part of the cold stage may be imputed to the same power. I judge so, because the cold stage appears to be universally a means of producing the hot ; because cold, externally applied, has very often similar effects ; and more certainly still, because it seems to be in proportion to the degree of tremor in the cold stage, that the hot stage proceeds more or less quickly to a
 termination

termination of the paroxysm, and to a more complete solution and longer intermission. See XXX.

XL.

It is to be particularly observed, that, during the cold stage of fever, there seems to be a spasm induced every where on the extremities of the arteries, and more especially of those upon the surface of the body. This appears from the suppression of all excretions, and from the shrinking of the external parts; and although this may perhaps be imputed, in part, to the weaker action of the heart in propelling the blood into the extreme vessels; yet, as these symptoms often continue after the action of the heart is restored, there is reason to believe, that a spasmodic constriction has taken place; that it subsists for some time, and supports the hot stage; for this stage ceases with the flowing of the sweat, and the return of other excretions, which are marks of the relaxation of vessels formerly constricted. Hoffman. Med. rat. System. Tom. IV. P. I. Sect. I. Cap. I. art. 4.

XLI.

The idea of fever, then, may be, that a spasm of the extreme vessels, however induced, proves an irritation to the heart and arteries; and that this continues till the spasm is relaxed or overcome. There are many appearances which support this opinion; and
there

there is little doubt that a spasm does take place, which proves an irritation to the heart, and therefore may be considered as a principal part in the proximate cause of fever. It will still, however remain a question, what is the cause of this spasm ; whether it be directly produced by the remote cause of fever, or if it be only a part of the operation of the *vis medicatrix naturæ*.

XLII.

I am disposed to be of the latter opinion, because, in the *first* place, while it remains still certain that a debility lays the foundation of fever, it is not obvious in what manner the debility produces the spasm, and, what seems to be its effect, the increased action of the heart and arteries ; and, *secondly*, because, in almost all the cases in which an effort is made by the *vis medicatrix naturæ*, a cold fit and a spasm of the extreme vessels are almost always the beginnings of such an effort. See Gaub. Pathol. Medicin. art. 750.

XLIII.

It is therefore presumed, that such a cold fit and spasm at the beginning of fever, is a part of the operation of the *vis medicatrix* ; but, at the same time, it seems to me probable, that, during the whole course of the fever, there is an atony subsisting in the extreme vessels, and that the relaxation of the
spasm

spasm requires the restoring of the tone and action of these.

XLIV.

This it may be difficult to explain ; but I think it may be ascertained as a fact, by the consideration of the symptoms which take place with respect to the functions of the stomach in fevers, such as the anorexia, nausea, and vomiting. (XIV.)

From many circumstances it is sufficiently certain, that there is a consent between the stomach and surface of the body ; and in all cases of the consent of distant parts, it is presumed to be by the connexion of the nervous system, and that the consent which appears is between the sentient and moving fibres of the one part with those of the other ; is such, that a certain condition prevailing in the one part occasions a similar condition in the other.

In the case of the stomach and surface of the body, the consent particularly appears by the connexion which is observed between the state of the perspiration and the state of the appetite in healthy persons ; and if it may be presumed that the appetite depends upon the state of tone in the muscular fibres of the stomach, it will follow, that the connexion of appetite and perspiration depends upon a consent between the muscular fibres of the stomach and the muscular fibres of the extreme vessels, or of the organ of perspiration, on the surface of the body.

It

It is further in proof of the connexion between the appetite and perspiration, and at the same time of the circumstances on which it depends, that cold applied to the surface of the body, when it does not stop perspiration, but proves a stimulus to it, is always a powerful means of exciting appetite.

Having thus established the connexion or consent mentioned, we argue, that as the symptoms of anorexia, nausea, and vomiting, in many cases, manifestly depend upon a state of debility or loss of tone in the muscular fibres of the stomach ; so it may be presumed, that these symptoms, in the beginning of fever, depend upon an atony communicated to the muscular fibres of the stomach from the muscular fibres of the extreme vessels on the surface of the body.

That the debility of the stomach which produces vomiting in the beginning of fevers actually depends upon an atony of the extreme vessels on the surface of the body, appears particularly from a fact observed by Dr. Sydenham. In the attack of the plague, a vomiting happens, which prevents any medicine from remaining on the stomach ; and Dr. Sydenham tells us, that in such cases he could not overcome this vomiting but by external means applied to produce a sweat ; that is, to excite the action of the vessels on the surface of the body.

The same connexion between the state of the stomach and that of the extreme vessels

on the surface of the body, appears from this also, that the vomiting, which so frequently happens in the cold stage of fevers, commonly ceases upon the coming on of the hot, and very certainly upon any sweat's coming out (XIV.) It is indeed probable, that the vomiting in the cold stage of fevers, is one of the means employed by nature for restoring the determination to the surface of the body ; and it is a circumstance affording proof, both of this, and of the general connexion between the stomach and surface of the body, that emetics thrown into the stomach, and operating there, in the time of the cold stage, commonly put an end to it, and bring on the hot stage.

It also affords a proof of the same connexion, that cold water taken into the stomach produces an increase of heat on the surface of the body, and is very often a convenient and effectual means of producing sweat.

From the whole we have now said on this subject, I think it is sufficiently probable, that the symptoms of anorexia, nausea, and vomiting, depend upon, and are a proof of, an atony subsisting in the extreme vessels on the surface of the body ; and that this atony therefore, now ascertained as a matter of fact, may be considered as a principal circumstance in the proximate cause of fever.

XLV.

This atony we suppose to depend upon a diminution of the energy of the brain ; and
that

that this diminution takes place in fevers, we conclude, not only from the debility prevailing in so many of the functions of the body, mentioned above (XXXV.) but particularly from symptoms which are peculiar to the brain itself. Delirium is a frequent symptom of fever ; and as from the physiology and pathology we learn that this symptom commonly depends upon some inequality in the excitement of the brain or intellectual organ ; we hence conclude, that, in fever, it denotes some diminution in the energy of the brain. Delirium, indeed, seems often to depend upon an increased impetus of the blood in the vessels of the brain, and therefore attends phrenitis. It frequently appears also in the hot stage of fevers, accompanied with a headach and throbbing of the temples. But as the impetus of the blood in the vessels of the head is often considerably increased by exercise, external heat, passions, and other causes, without occasioning any delirium ; so, supposing that the same impetus, in the case of fever, produces delirium, the reason must be, that, at the same time, there is some cause which diminishes the energy of the brain, and prevents a free communication between the parts concerned in the intellectual functions. Upon the same principles also, I suppose there is another species of delirium, depending more entirely on the diminished energy of the brain, and which may therefore arise when there is no unusual increase of the impetus of the blood in the

vessels of the brain. Such seems to be the delirium occurring at the beginning of the cold stage of fevers, or in the hot stage of such fevers as show strong marks of debility in the whole system.

XLVI.

Upon the whole, our doctrine of fever is explicitly this. The remote causes (XXXVI.) are certain sedative powers applied to the nervous system, which diminishing the energy of the brain, thereby produce a debility in the whole of the functions (XXXV.) and particularly in the action of the extreme vessels (XLIII.) (XLIV.) Such, however, is, at the same time, the nature of the animal economy (XXXVIII.) that this debility proves an indirect stimulus to the sanguiferous system; whence, by the intervention of the cold stage, and spasm connected with it (XXXIX. XL.) the action of the heart and larger arteries is increased (XL.) and continues so (XLI.) till it has had the effect of restoring the energy of the brain, of extending this energy to the extreme vessels, of restoring therefore their action, and thereby especially overcoming the spasm affecting them; upon the removing of which, the exertion of sweat, and other marks of the relaxation of excretories, take place.

XLVII.

This doctrine will, as I suppose, serve to explain not only the nature of fever in general,

eral, but also the various cases of it which occur. Before proceeding, however, to this, it may be proper to point out the opinions, and, as I apprehend, the mistakes, which have formerly prevailed on this subject.

XLVIII.

It has been supposed that a lentor or viscid-ity prevailing in the mass of blood, and stagnating in the extreme vessels, is the cause of the cold stage of fevers and its consequences. But there is no evidence of any such viscosity previously subsisting in the fluids; and as it is very improbable that such a state of them can be very quickly produced, so the suddenness with which paroxysms come on, renders it more likely that the phenomena depend upon some cause acting upon the nervous system, or the primary moving powers of the animal economy. See Van Swieten apud Boerh. Aph. 755.

XLIX.

Another opinion, which has been almost universally received, is, that a noxious matter introduced into or generated in the body, is the proximate cause of fever; and that the increased action of the heart and arteries, which forms so great a part of the disease, is an effort of the *vis medicatrix naturæ* to expel this morbid matter; and particularly to change

or concoct it, so as to render it either altogether innocent, or, at least, fit for being more easily thrown out of the body. This doctrine, however, although of as great antiquity as any of the records of physic now remaining, and although it has been received by almost every school of medicine, yet appears to me to rest upon a very uncertain foundation. There are fevers produced by cold, fear, and other causes, accompanied with all the essential circumstances of fever, and terminating by sweat ; but, at the same time, without any evidence or suspicion of morbid matter.

There have been fevers suddenly cured by a hemorrhagy, so moderate as could not carry out any considerable portion of a matter diffused over the whole mass of blood ; nor can we conceive how the morbid matter could be collected or determined to pass off by such an outlet as in that case is opened.

Even supposing a morbid matter were present, there is no explanation given in what manner the concoction of it is performed ; nor is it shown that any such change does in fact take place. In certain cases, it is indeed evident, that a noxious matter is introduced into the body, and proves the cause of fever ; but, even in these cases, it appears that the noxious matter is thrown out again, without having suffered any change ; that the fever often terminates before the matter is expelled ; and that, upon many occasions, without waiting the supposed time of concoction, the fever

ver can be cured, and that by remedies which do not seem to operate upon the fluids, or to produce any evacuation.

L.

While we thus reason against the notion of fever being an effort of nature, for concocting and expelling a morbid matter ; I by no means intend to deny that the cause of fever frequently operates upon the fluids, and particularly produces a putrescent state of them. I acknowledge that this is frequently the case ; but, at the same time, I maintain, that such a change of the fluids is not commonly the cause of fever ; that very often it is an effect only ; and that there is no reason to believe the termination of the fever to depend upon the expulsion of the putrid matter.

LI.

Another opinion which has prevailed, remains still to be mentioned. In intermittent fevers, a great quantity of bile is commonly thrown out by vomiting ; and this is so frequently the case, that many have supposed an unusual quantity of bile, and perhaps a peculiar quality of it, to be the cause of intermittent fevers. This, however, does not appear to be well founded. Vomiting, by whatever means excited, if often repeated with violent straining, seems to be powerful in emulging
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the biliary ducts, and commonly throws out a great deal of bile. This will happen especially in the case of intermittent fevers. For as, in the state of debility and cold stage of these fevers, the blood is not propelled in the usual quantity into the extreme vessels, and particularly into those on the surface of the body, but is accumulated in the vessels of the internal parts, and particularly in the vena portarum ; so this may occasion a more copious secretion of bile.

These considerations will, in some measure, account for the appearance of an unusual quantity of bile in intermittent fevers ; but the circumstance which chiefly occasions the appearance of bile in these cases, is the influence of warm climates and seasons. These seldom fail to produce a state of the human body, in which the bile is disposed to pass off, by its secretories, in greater quantity than usual ; and perhaps also changed in its quality, as appears from the disease of cholera, which so frequently occurs in warm seasons. At the same time, this disease occurs often without fever ; and we shall hereafter render it sufficiently probable, that intermittent fevers, for the most part, arise from another cause, that is, from marsh effluvia ; while, on the other hand, there is no evidence of their arising from the state of the bile only. The marsh effluvia, however, commonly operate most powerfully in the same season that produces the change and redundancy of the bile ;

bile ; and therefore, considering the vomiting, and other circumstances of the intermittent fevers which here concur, it is not surprising that autumnal intermittents are so often attended with effusions of bile.

This view of the subject does not lead us to consider the state of the bile as the cause of intermittents, but merely as a circumstance accidentally concurring with them, from the state of the season in which they arise. What attention this requires in the conduct of the disease, I shall consider hereafter.

LII.

From this view of the principal hypotheses which have hitherto been maintained with respect to the proximate cause of fever, it will appear, that fevers do not arise from changes in the state of the fluids ; but that, on the contrary, almost the whole of the phenomena of fevers lead us to believe that they chiefly depend upon changes in the state of the moving powers of the animal system. Though we should not be able to explain all the circumstances of the disease, it is at least of some advantage to be led into the proper train of investigation. I have attempted to pursue it ; and shall now endeavour to apply the doctrine already delivered, towards explaining the diversity of fevers.

C H A P. III.

OF THE DIFFERENCE OF FEVERS,
AND ITS CAUSES.

LIII.

TO ascertain the difference of fevers, I think it necessary to observe, in the first place, that every fever of more than one day's duration consists of repeated, and in some measure separate, paroxysms; and that the difference of fevers taken notice of above (from XXV. to XXX.) appears to consist in the different state of paroxysms, and in the different circumstances of their repetition.

LIV.

That fevers generally consist of distinct, and in some measure separately repeated, paroxysms, I have alleged above to be a matter of fact; but I shall here endeavour to confirm it, by assigning the cause.

LV.

In every fever, in which we can distinctly observe any number of separate paroxysms, we constantly find that each paroxysm is finished in less than twenty four hours; but as I cannot perceive any thing in
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the cause of fevers determining to this, I must presume it to depend on some general law of the animal economy. Such a law seems to be that which subjects the economy, in many respects, to a diurnal revolution. Whether this depends upon the original conformation of the body, or upon certain powers constantly applied to it, and inducing a habit, I cannot positively determine ; but the returns of sleep and watching, of appetites and excretions, and the changes which regularly occur in the state of the pulse, show sufficiently, that in the human body a diurnal revolution takes place.

LVI.

It is this diurnal revolution which, I suppose, determines the duration of the paroxysms of fevers ; and the constant and universal limitation of these paroxysms (as observed in LV.) while no other cause of it can be assigned, renders it sufficiently probable that their duration depends upon, and is determined by, the revolution mentioned. And that these paroxysms are connected with that diurnal revolution, appears further from this, that though the intervals of paroxysms are different in different cases, yet the times of the accession of paroxysms are generally fixed to one time of the day ; so that Quotidians come on in the morning, Tertians at noon, and Quartans in the afternoon.

LVII.

It remains to be remarked, that as Quartans and Tertians are apt to become Quotidians, these to pass into the state of Remittents, and these last to become Continued ; and that, even in the Continued form, daily exacerbations and remissions are generally to be observed ; so all this shows so much the power of diurnal revolution, that when, in certain cases, the daily exacerbations and remissions are with difficulty distinguished, we may still presume, that the general tendency of the economy prevails, that the disease still consists of repeated paroxysms, and, upon the whole, that there is no such disease as that which the schools have called a Continent Fever. I expect that this doctrine will be confirmed by what I shall say hereafter concerning the periodical movements observed in continued fevers.

LVIII.

It being thus proved, that every fever, of more than one day's duration, consists of repeated paroxysms ; we in the next place, remark, that the repetition of paroxysms depends upon the circumstances of the paroxysms which have already taken place. From what was observed in XXX. and XXXI. it appears, that the longer paroxysms are protracted,

tracted, they are the sooner repeated ; and, therefore, that the cause of the frequent repetition is to be sought for in the cause of the protraction of paroxysms.

LIX.

Agreeably to what is laid down in XLVI. and to the opinion of most part of physicians, I suppose, that, in every fever, there is a power applied to the body, which has a tendency to hurt and destroy it, and produces in it certain motions which deviate from the natural state ; and, at the same time, in every fever which has its full course, I suppose, that, in consequence of the constitution of the animal economy, there are certain motions excited, which have a tendency to obviate the effects of the noxious power, or to correct and remove them. Both these kinds of motion are considered as constituting the disease.

But the former is perhaps strictly the morbid state, while the latter is to be considered as the operation of the *vis medicatrix naturæ* of salutary tendency, and which I shall hereafter call the REACTION of the system.

LX.

Upon the supposition that these two states take place in every paroxysm of fever, it will appear to be chiefly in the time of the hot stage that the reaction operates in removing
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ing the morbid state; and therefore, as this operation succeeds more or less quickly, the hot stage of paroxysms will be shorter or longer. But as the length of paroxysm depends chiefly upon the duration of the hot stage, so the longer duration of this and of paroxysms, must be owing either to the obstinacy of resistance in the morbid state, or to the weakness of the salutary reaction; and it is probable that sometimes the one and sometimes the other of these circumstances takes place.

LXI.

It seems to be only by the state of the spasm, that we can judge of the resistance of the morbid state of fever: And with respect to this spasm I observe, that either the cause exciting it may be different in different cases; or, though the cause should be the same in different persons, the different degree of irritability in each may give occasion to a greater or lesser degree of spasm; and therefore, the reaction in fever being given, the continuance of the hot stage, and of the whole paroxysm, may be longer or shorter, according to the degree of spasm that has been formed.

LXII.

One cause of the obstinacy of spasm in fevers may be clearly perceived. In inflammatory diseases, there is a diathesis phlogistica prevailing

prevailing in the body (and this diathesis we suppose to consist in an increased tone of the whole arterial system.) When, therefore, this diathesis accompanies fever, as it sometimes does, it may be supposed to give occasion to the febrile spasm's being formed more strongly, and thereby to produce more protracted paroxysms. Accordingly we find, that all inflammatory fevers are of the continued kind; and that all the causes of the diathesis phlogistica have a tendency to change intermittent into continued fevers. Continued fevers, then, being often attended with the diathesis phlogistica, we conclude, that in many cases, this is the cause of their continued form.

all paroxysms, debility &c.
protracted in
stead of LXIII. *tone*

In many fevers, however, there is no evidence of any diathesis phlogistica being present, nor of any other cause of more considerable spasm; and, in such cases, therefore, we must impute the protraction of paroxysms, and the continued form of the fever, to the weakness of reaction. That this cause takes place, we conclude from hence, that, in many cases of fever, wherein the separate paroxysms are the longest protracted, and the most difficultly observed, we find the most considerable symptoms of a general debility: And therefore we infer, that, in such cases, the protracted paroxysms, and continued form, depend upon a weaker reaction; owing either to the causes

causes of debility applied having been of a more powerful kind, or from circumstances of the patient's constitution favouring their operation.

LXIV.

Upon these principles we make a step towards explaining in general, with some probability, the difference of fevers; but must own, that there is much doubt and difficulty in applying the doctrine to particular cases. It applies tolerably well to explain the different states of intermittents, as they are more purely such, or as they approach more and more to the continued form: But several difficulties still remain with respect to many circumstances of intermittents; and more still with respect to the difference of those continued fevers, which we have distinguished in our Nosology as different from intermittents, and as more especially intitled to the appellation of Continued, (see Syn. Nos. Meth. P. V. Ch. I. Sect. II.) and explained more fully above.

LXV.

From the view given (LXIII. and LXIV.) of the causes of the protraction of paroxysms, and therefore of the form of Continued fevers, strictly so called, it seems probable, that the remote causes of these operate by occasioning
either

either a phlogistic diathesis, or a weaker reaction ; for we can observe, that the most obvious difference of continued fevers depends upon the prevalence of one or other of these states.

LXVI.

Continued fevers have been accounted of great diversity ; but physicians have not been successful in marking these differences, or in reducing them to any general heads. The distinctions made by the ancients are not well understood ; and, so far as either they or the modern nosologists have distinguished continued fevers by a difference of duration, their distinctions are not well founded, and do not apply in such a manner as to be of any use. We think it agreeable to observation, and to the principles above laid down (LXIII. LXIV.) to distinguish continued fevers according as they show either an inflammatory irritation, or a weaker reaction.

LXVII.

This distinction is the same with that of fevers into the INFLAMMATORY and NERVOUS ; the distinction at present most generally received in Britain. To the first, as a genus, I have given the name of Synocha ; to the second, that of Typhus ; and, little studious whether these names be authorised by the ancient use of the same terms, I depend upon
their

their being understood by the characters annexed to them in our Nosology, which I apprehend to be founded on observation.

LXVIII.

By these characters I think continued fevers may in practice be distinguished ; and if that be the case, the principles above laid down will be confirmed.

LXIX.

Beside these differences of continued fever, now mentioned, I am not certain of having observed any other that can be considered as fundamental. But the most common form of continued fevers, in this climate, seems to be a combination of these two genera ; and I have therefore given such a genus a place in our Nosology, under the title of Synochus. At the same time, I think that the limits between the Synochus and Typhus will be with difficulty assigned ; and I am disposed to believe, that the Synochus arises from the same causes as the Typhus, and is therefore only a variety of it.

LXX.

The Typhus seems to be a genus comprehending several species. These, however, are not yet well ascertained by observation ; and
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in the mean time we can perceive that many of the different cases observed do not imply any specific difference, but seem to be merely varieties, arising from a different degree of power in the cause, from different circumstances of the climate or season in which they happen, or from different circumstances in the constitution of the persons affected.

LXXI.

Some of the effects arising from these circumstances require to be particularly explained.

One is, an unusual quantity of bile appearing in the course of the disease. This abundance of bile may possibly attend some continued fevers, strictly so called ; but, for the reasons above explained, it more commonly attends intermittents, and, we believe, it might have been enumerated (XXIX.) among the marks distinguishing the latter kind of fevers from the former. But, though an unusual quantity of bile should appear with continued fevers, it is considered in this case, as in that of intermittents, to be a coincidence only, owing to the state of the season, and producing no different species or fundamental distinction, but merely a variety of the disease. I think it proper to observe here, that it is probable that the most part of the continued fevers named Bilious have been truly such as belong to the section of Intermittents.

LXXII.

LXXII.

Another effect of the circumstances occasionally varying the appearance of typhus, is a putrescent state of the fluids. The ancients, and likewise the moderns, who are in general much disposed to follow the former, have distinguished fevers, as putrid and non-putrid : But the notions of the ancients, on this subject, were not sufficiently correct to deserve much notice ; and it is only of late that the matter has been more accurately observed, and better explained.

From the dissolved state of the blood, as it presents itself when drawn out of the veins, or as it appears from the red blood's being disposed to be effused and run off by various outlets, and from several other symptoms to be hereafter mentioned, I have now no doubt, how much soever it has been disputed by some ingenious men, that a putrescency of the fluids to a certain degree does really take place in many cases of fever. This putrescency, however, often attends intermittent, as well as continued fevers, and, of the continued kind, both the synochus and typhus, and all of them in very different degrees ; so that, whatever attention it may deserve in practice, there is no fixing such limits to it as to admit of establishing a species under the title of PUTRID.

LXXIII.

Beside differing by the circumstances already mentioned, fevers differ also by their
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being accompanied with symptoms which belong to diseases of the other orders of pyrexia. This sometimes happens in such a manner, as to render it difficult to determine which of the two is the primary disease. Commonly, however, it may be ascertained by the knowledge of the remote cause, and of the prevailing epidemic, or by observing the series and succession of symptoms.

LXXIV.

Most of our systems of physic have marked, as a primary one, a species of fever under the title of *HECTIC*; but, as it is described, I have never seen it as a primary disease. I have constantly found it as a symptom of some topical affection, most commonly of an internal suppuration; and as such it shall be considered in another place.

LXXV.

The distinction of the several cases of intermittent fever I have not prosecuted here; both because we cannot assign the causes of the differences which appear; and because I apprehend that the differences which in fact occur may be readily understood from what is said above (XXV. XXVI. and XXVII.) and more fully from our Methodical Nosology, Cl. I. Sect. I.

C H A P. IV.

OF THE REMOTE CAUSES OF FEVER.

LXXVI.

AS fever has been held to consist chiefly in an increased action of the heart and arteries, physicians have supposed its remote causes to be certain direct stimulants fitted to produce this increased action. In many cases, however, there is no evidence of such stimulants being applied; and, in those in which they are applied, they either produce only a temporary frequency of the pulse, which cannot be considered as a disease; or, if they do produce a permanent febrile state, it is by the intervention of a topical inflammation, which produces a disease different from what is strictly called fever. (VIII.)

LXXVII.

That direct stimulants are the remote causes of fever, seems farther improbable; because the supposition does not account for the phenomena attending the accession of fevers, and because other remote causes can with greater certainty be assigned.

LXXVIII.

LXXVIII.

As fevers are so generally epidemic, it is probable, that some matter floating in the atmosphere, and applied to the bodies of men, ought to be considered as the remote cause of fevers : And these matters present in the atmosphere, and thus acting upon men, may be considered, either as *CONTAGIONS*, that is, effluvia arising directly or originally from the body of a man under a particular disease, and exciting the same kind of disease in the body of the person to whom they are applied ; or *MIASMATA*, that is effluvia arising from other substances than the bodies of men, producing a disease in the person to whom they are applied.

LXXIX.

Contagions have been supposed to be of great variety ; and it is possible this may be the case ; but that they truly are so, does not appear clearly from any thing we know at present. The genera and species of contagious diseases, of the class of *Pyrexiaë*, at present known, are in number not very great. They chiefly belong to the order of Fevers, to that of *Exanthemata*, or that of *Profluvia*. Whether there be any belonging to the order of *Phlegmasiæ*, is doubtful ; and though there should, it will not much increase the number
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of contagious pyrexiaë. Of the contagious exanthemata and profluvia, the number of species is nearly ascertained ; and each of them is so far of a determined nature, that though they have now been observed and distinguished for many ages, and in many different parts of the world, they have been always found to retain the same general character, and to differ only in circumstances, that may be imputed to season, climate, and other external causes, or to the peculiar constitutions of the several persons affected. It seems, therefore, probable, that, in each of these species, the contagion is of one specific nature ; and that the number of contagious exanthemata or profluvia is hardly greater than the number of species enumerated in the systems of nosology.

LXXX.

If, while the contagious exanthemata and profluvia are thus limited, we should suppose the contagious pyrexiaë to be still of great and unlimited variety, it must be with respect to the genera and species of continued fevers. But if I be right in limiting, as I have done, the genera of these fevers (LXVII.—LXX.) it will appear likely that the contagions which produce them are not of great variety ; and this will be much confirmed, if we can render it probable that there is one principal, perhaps one common, source of such contagion.

LXXXI.

LXXXI.

To this purpose, it is now well known, that the effluvia constantly arising from the living human body, if long retained in the same place, without being diffused in the atmosphere, acquire a singular virulence ; and, in that state, being applied to the bodies of men, become the cause of a fever which is highly contagious.

The existence of such a cause is fully proved by the late observations on jail and hospital fevers ; and that the same virulent matter may be produced in many other places, must be sufficiently obvious : And it is probable that the contagion arising in this manner is not, like many other contagions, permanent and constantly existing ; but that, in the circumstances mentioned, it is occasionally generated. At the same time, the nature of the fevers from thence, upon different occasions, arising, renders it probable that the virulent state of human effluvia is the common cause of them, as they differ only in a state of their symptoms ; which may be imputed to the circumstances of season, climate, &c. concurring with the contagion, and modifying its force.

LXXXII.

With respect to these contagions, though we have spoken of them as of a matter floating in the atmosphere, it is proper to observe,
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that they are never found to act but when they are near to the sources from whence they arise ; that is, either near to the bodies of men, from which they immediately issue ; or near to some substances which, as having been near to the bodies of men, are imbued with their effluvia, and in which substances these effluvia are sometimes retained in an active state for a very long time.

The substances thus imbued with an active and infectious matter, may be called *Fomites* ; and it appears to me probable, that contagions, as they arise from fomites, are more powerful than as they arise immediately from the human body.

LXXXIII.

Miasmata are next to be considered. These may arise from various sources, and be of different kinds ; but we know little of their variety, or of their several effects. We know with certainty only one species of miasma, which can be considered as the cause of fever ; and, from the universality of this, it may be doubted if there be any other.

LXXXIV.

The miasma, so universally the cause of fever, is that which arises from marshes or moist ground, acted upon by heat. So many observations have now been made with respect to
this,

this, in so many different regions of the earth, that there is neither any doubt of its being in general a cause of fevers, nor of its being very universally the cause of intermittent fevers, in all their different forms. The similarity of the climate, season, and soil, in the different countries in which intermittents arise, and the similarity of the diseases, though arising in different regions, concur in proving that there is one common cause of these diseases, and that this is the marsh miasma.

What is the particular nature of this miasma, we know not ; nor do we certainly know whether or not it differs in kind : But it is probable that it does not ; and that it varies only in the degree of its power, or perhaps as to its quantity, in a given space.

LXXXV.

It has been now rendered probable, that the remote causes of fevers (VIII.) are chiefly Contagions or Miasmata, and neither of them of great variety. We have supposed that miasmata are the cause of intermittents, and contagions the cause of continued fevers, strictly so named ; but we cannot with propriety employ these general terms. For, as the cause of continued fevers may arise from fomites, and may, in such cases, be called a Miasma ; and as other miasmata also may produce contagious diseases ; it will be proper to distinguish the causes of fevers, by using the

terms *Human* or *Marsh Effluvia*, rather than the general ones of Contagion or Miasma.

LXXXVI.

To render our doctrine of fever consistent and complete, it is necessary to add here, that those remote causes of fever, human and marsh effluvia, seem to be of a debilitating or sedative quality. They arise from a putrescent matter. Their production is favoured and their power increased, by circumstances which favour putrefaction; and they often prove putrefactive ferments with respect to the animal fluids. As putrid matter, therefore, is always, with respect to animal bodies, a powerful sedative, so it can hardly be doubted that human and marsh effluvia are of the same quality; and it is confirmed by this, that the debility which is always induced, seems to be in proportion to the other marks that appear of the power of those causes.

LXXXVII.

Though we have endeavoured to show that fevers generally arise from marsh or human effluvia, we cannot, with any certainty, exclude some other remote causes, which are commonly supposed to have at least a share in producing those diseases. And I proceed, therefore, to inquire concerning these causes; the first of which that merits attention is, the power of cold applied to the human body.

LXXXVIII.

LXXXVIII.

The operation of cold on a living body is so different in different circumstances, as to be of difficult explanation ; it is here, therefore, attempted with some diffidence.

The power of cold may be considered as absolute or relative.

The *absolute* power is that by which it can diminish the temperature of the body to which it is applied. And thus, if the natural temperature of the human body is, as we suppose it to be, that of 98 degrees of Farenheit's thermometer * ; every degree of temperature less than that, may be considered as cold with respect to the human body ; and, in proportion to its degree, will have a tendency to diminish the temperature of the body. But as the living human body has in itself a power of generating heat, so it can sustain its own proper heat to the degree above mentioned, though surrounded by air or other bodies of a lower temperature than itself ; and it appears from observation, that, in this climate, air, or other bodies, applied to the living man, do not diminish the temperature of his body, unless the temperature of the bodies applied be below 62 degrees. From hence it appears, that the absolute power of cold in this climate, does not

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* In every instance of our mentioning degrees of heat or cold, we shall mention them by the degrees in Farenheit's scale ; and the expression of higher or lower shall always be according to that scale.

act upon the living human body, unless the cold applied be below the degree just now mentioned.

It appears also, that the human body's being furrounded by air of a lower temperature than itself, is necessary to its being retained in its proper temperature of 98 degrees ; for, in this climate, every temperature of the air above 62 degrees, applied to the human body, though still of a lower temperature than itself, is found to increase the heat of it. And from all this it appears, that the absolute power of cold with respect to the human body, is very different from what it is with respect to inanimate bodies.

LXXXIX.

The *relative* power of cold with respect to the living human body, is that power by which it produces a sensation of cold in it ; and with respect to this, it is agreeable to the general principle of sensation, that the sensation produced, is not in proportion to the absolute force of impression, but according as the new impression is stronger or weaker than that which had been applied immediately before. Accordingly, with respect to temperature, the sensation produced by any degree of this, depends upon the temperature to which the body had been immediately before exposed ; so that whatever is higher than this feels warm, and whatever is lower than it feels cold ; and
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it will therefore happen that the opposite sensations of heat and cold may on different occasions arise from the same temperature, as marked by the thermometer.

With respect to this, however, it is to be observed, that though every change of temperature gives a sensation of cold or heat as it is lower or higher than the temperature applied immediately before, the sensation produced is, in different cases, of different duration. If the temperature at any time applied is under 62 degrees, every increase of temperature applied will give a sensation of heat; but if the increase of temperature does not arise to 62 degrees, the sensation produced will not continue long, but be soon changed to a sensation of cold. In like manner, any temperature, applied to the human body, lower than that of the body itself, gives a sensation of cold; but if the temperature applied does not go below 62 degrees, the sensation of cold will not continue long, but be soon changed to a sensation of heat.

It will appear hereafter, that the effects of the sensation of cold will be very different, according as it is more permanent or transitory.

XC.

Having thus explained the operation of cold as absolute or relative with respect to the human body, I proceed to mention the general effects of cold upon it.

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1. Cold,

1. Cold, in certain circumstances, has manifestly a *sedative* power. It can extinguish the vital principle entirely, either in particular parts, or in the whole body ; and considering how much the vital principle of animals depends upon heat, it cannot be doubted that the power of cold is always more or less directly sedative.

This effect may be said to take place from every degree of absolute cold ; and, when the heat of the body has upon any occasion been preternaturally increased, every lower temperature may be useful in diminishing the activity of the system ; but it cannot diminish the natural vigour of the vital principle, till the cold applied is under 62 degrees ; nor even then will it have this effect, unless the cold applied be of an intense degree, or be applied for some length of time to a large portion of the body.

2. It is equally manifest, that, in certain circumstances, cold proves a *stimulus* to the living body, and particularly to the sanguiferous system.

It is probable, that this effect takes place in every case in which the temperature applied produces a sensation of cold ; and this, therefore, as depending entirely on the relative power of cold, will be in proportion to the change of temperature that takes place.

It appears to me probable, that every change of temperature from a higher to a lower degree, will prove more or less stimulant ; excepting

cepting when the cold applied is so intense, as immediately to extinguish the vital principle in the part.

3. Beside the sedative and stimulant powers of cold, it is manifestly also a powerful *astringent*, causing a contraction of the vessels on the surface of the body, and thereby producing a paleness of the skin and a suppression of perspiration; and it seems to have similar effects when applied to internal parts. It is likewise probable, that this constriction, as it takes place especially in consequence of the sensibility of the parts to which the cold is applied, will in some measure be communicated to other parts of the body; and that thereby the application of cold proves a *tonic* power with respect to the whole system.

These effects of tonic and astringent power seem to take place both from the absolute and relative power of cold; and therefore every application of it which gives a sensation of cold, is, in its first effect, both astringent and stimulant, though the former may be often prevented from being either considerable or permanent when the latter immediately takes place.

XCI.

It will be obvious, that these several effects of cold cannot all take place at the same time, but may in succession be variously combined. The stimulant power taking place obviates the effects,

effects, at least the permanency of the effects, that might otherwise have arisen from the sedative power. That the same stimulant power prevents these from the astringent, I have said above ; but the stimulant and tonic powers of cold are commonly, perhaps always, conjoined.

XCII.

These general effects of cold now pointed out are sometimes salutary, frequently morbid ; but it is the latter only I am to consider here, and they seem to be chiefly the following.

1. A general inflammatory disposition of the system, which is commonly accompanied with Rheumatism or other Phlegmasiæ.

2. The same inflammatory disposition accompanied with Catarrh.

3. A Gangrene of particular parts.

4. A Palsy of a single member.

5. A Fever, or Fever strictly so called (VIII.) which it often produces by its own power alone, but more commonly it is only an exciting cause of fever by concurring with the operation of human or marsh effluvia.

XCIII.

Cold is often applied to the human body without producing any of these morbid effects, and it is difficult to determine in what circumstances

circumstances it especially operates in producing them. It appears to me, that the morbid effects of cold depend partly upon certain circumstances of the cold itself, and partly on certain circumstances of the person to whom it is applied.

XCIV.

The circumstances of the cold applied, which seem to give it effect, are, 1. The intensity or degree of the cold ; 2. The length of time during which it is applied ; 3. The degree of moisture at the same time accompanying it ; 4. Its being applied by a wind or current of air ; 5. Its being a vicissitude, or sudden and considerable change of temperature, from heat to cold.

XCV.

The circumstances of persons rendering them more liable to be affected by cold, seem to be, 1. The weakness of the system, and particularly the lessened vigour of the circulation, occasioned by fasting, by evacuations, by fatigue, by a last night's debauch, by excess in venery, by long watching, by much study, by rest immediately after great exercise, by sleep, and by preceding disease. 2. The body, or its parts, being deprived of their accustomed coverings. 3. One part
E 6 of.

of the body being exposed to cold, while the rest is kept in its usual or a greater warmth.

XCVI.

The power of these circumstances (XCV.) is demonstrated by the circumstances enabling persons to resist cold. These are a certain vigour of constitution, exercise of the body, the presence of active passions, and the use of cordials.

Beside these, there are other circumstances which, by a different operation, enable persons to resist cold acting as a sensation ; such as, passions engaging a close attention to one object, the use of narcotics, and that state of the body in which sensibility is greatly diminished, as in maniacs. To all which is to be added, the power of habit with respect to those parts of the body to which cold is more constantly applied, which both diminishes sensibility and increases the power of the activity generating heat.

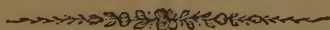
XCVII.

Beside cold, there are other powers that seem to be remote causes of fever ; such as, fear, intemperance in drinking, excess in venery, and other circumstances, which evidently weaken the system. But whether any of these sedative powers be alone the remote cause of fever, or if they only operate either as concurring

ring with the operation of marsh or human effluvia, or as giving an opportunity to the operation of cold, are questions not to be positively answered ; they may possibly of themselves produce fever ; but most frequently they operate as concurring in one or other of the ways above mentioned.

XCVIII.

Having now mentioned the chief of the remote causes of fevers, it may be further observed, that these will arise more or less readily, according as miasmata and contagions are more or less prevailing and powerful, or as these are more or less favoured by the concurrence of cold and other sedative powers.



C H A P. V.

OF THE PROGNOSIS OF FEVERS.

XCIX.

AS fevers (by LX.) consist of both morbid and salutary motions and symptoms, the tendency of the disease to a happy or fatal issue, or the prognostic in fevers, has been established by marking the prevalence of the morbid or of the salutary symptoms ; and it might be properly so established,

lished, if we could certainly distinguish between the one and the other of these kinds of symptoms ; but the operation of the reaction, or salutary efforts of nature in curing fevers, is still involved in so much obscurity, that I cannot explain the several symptoms of it so clearly as to apply them to the establishing prognostics ; and this, I think, may be done better, by marking the morbid symptoms which show the tendency to death in fevers.

C.

This plan of the prognostics in fevers must proceed upon our knowledge of the causes of death in general, and in fevers more particularly.

The causes of death, in general, are either direct or indirect.

The first are those which directly attack and destroy the vital principle, as lodged in the nervous system ; or destroy the organization of the brain immediately necessary to the action of that principle.

The second, or the indirect causes of death, are those which interrupt such functions as are necessary to the circulation of the blood, and thereby necessary to the due continuance and support of the vital principle.

CI.

Of these general causes, those which operate more particularly in fevers seem to be,
first,

first, The *violence of reaction* ; which either, by repeated violent excitements, destroys the vital power itself ; or, by its violence, destroys the organization of the brain necessary to the action of that power ; or, by the same violence, destroys the organization of the parts more immediately necessary to the circulation of the blood.

Secondly, The cause of death in fevers may be a *poison*, that is, a power capable of destroying the vital principle ; and this poison may be either the miasma or contagion which was the remote cause of the fever, or it may be a putrid matter generated in the course of the fever. In both cases, the operation of such a power appears either as acting chiefly on the nervous system, inducing the symptoms of debility ; or as acting upon the fluids of the body, inducing a putrescent state in them.

CH.

From all this it appears, that the symptoms showing the tendency to death in fevers, may be discovered by their being either the symptoms

Of *violent reaction* ;

Of *great debility* ;

Or, of a *strong tendency to putrefaction in the fluids*.

And upon this supposition, I proceed now to mark those symptoms more particularly.

CIII.

CIII.

The symptoms which denote the *violence of reaction*, are, 1. The increased force, hardness, and frequency of the pulse. 2. The increased heat of the body. 3. The symptoms which are the marks of a general inflammatory diathesis, and more especially of a particular determination to the brain, lungs, or other important viscera. 4. The symptoms which are the marks of the cause of violent reaction; that is, of a strong stimulus applied, or of a strong spasm formed, the latter appearing in a considerable suppression of the excretions.

CIV.

The symptoms which denote *a great degree of debility*, are,

In the ANIMAL FUNCTIONS: I. The weakness of the voluntary motions; II. The irregularity of the voluntary motions, depending on their debility; III. The weakness of sensation; IV. The weakness and irregularity of the intellectual operations.

In the VITAL FUNCTIONS: I. The weakness of the pulse; II. The coldness or shrinking of the extremities; III. The tendency to a *deliquium animi* in an erect posture; IV. The weakness of respiration.

In the NATURAL FUNCTIONS: I. The weakness of the stomach, as appearing in anorexia,

orexia, nausea, and vomiting ; II. Involuntary excretions depending upon a palsy of the sphincters ; III. Difficult deglutition, depending upon a palsy of the muscles of the fauces.

CV.

Lastly, The symptoms denoting the putrescent state of the fluids, are,

I. With respect to the stomach ; the loathing of animal food, nausea and vomiting, great thirst, and a desire of acids.

II. With respect to the fluids ; 1. The blood drawn out of the veins not coagulating as usual ; 2. Hemorrhagy from different parts, without marks of increased impetus ; 3. Effusions under the skin or cuticle, forming petechiæ, maculæ, and vibices ; 4. Effusions of a yellow serum under the cuticle.

III. With respect to the state of the excretions ; fetid breath, frequent loose and fetid stools, high coloured turbid urine, fetid sweats, and the fetor and livid colour of blistered places.

IV. The cadaverous smell of the whole body.

CVI.

These several symptoms have very often, each of them singly, a share in determining the prognostic ; but more especially by their concurrence

concurrence and combination with one another ; particularly those of debility with those of putrescency.

CVII.

On the subject of the prognostic, it is proper to observe, that many physicians have been of opinion there is something in the nature of fevers which generally determines them to be of a certain duration ; and therefore that their terminations, whether salutary or fatal, happen at certain periods of the disease, rather than at others. These periods are called the **CRITICAL DAYS** ; carefully marked by Hippocrates and other ancient physicians, as well as by many moderns of the greatest eminence in practice ; whilst at the same time many other moderns, of no inconsiderable authority, deny their taking place in the fevers of these northern regions which we inhabit.

CVIII.

I am of opinion that the doctrine of the ancients, and particularly that of Hippocrates, on this subject, was well founded ; and that it is applicable to the fevers of our climate.

CIX.

I am of this opinion, *first*, Because I observe that the animal economy, both from its
own

own constitution, and from habits which are easily produced in it, is readily subjected to periodical movements. *Secondly*, Because, in the diseases of the human body, I observe periodical movements to take place with great constancy and exactness ; as in the case of intermittent fevers, and many other diseases.

CX.

These considerations render it probable, that exact periodical movements may take place in continued fevers ; and I think there is evidence of such movements actually taking place.

CXI.

The critical days, or those on which we suppose the termination of continued fevers especially to happen, are, the *third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, and twentieth*. We mark none beyond this last ; because, though fevers are sometimes protracted beyond this period, it is, however, more rarely ; so that there are not a sufficient number of observations to ascertain the course of them ; and further, because it is probable that, in fevers long protracted, the movements become less exact and regular, and therefore less easily observed.

CXII.

CXII.

That the days now mentioned are the critical days, seems to be proved by the particular facts which are found in the writings of Hippocrates. From these facts, as collected from the several writings of that author by *M. de Haen*, it appears, that of one hundred and sixty three instances of the termination of fevers, which happened on one or other of the first twenty days of the disease, there are one hundred and seven, or more than two thirds of the whole number, which happened on one or other of the eight days above mentioned ; that none happened on the second or thirteenth day ; and upon the eighth, tenth, twelfth, fifteenth, sixteenth, eighteenth, and nineteenth, there are but eighteen instances of termination, or one ninth of the whole.

CXIII.

As the terminations which happen on the seven days last mentioned, are, upon the whole, few ; and, upon any one of them, fewer than those which happen on any of our supposed critical days ; so there are therefore nine days which may be called NONCRITICAL ; while, on the other hand, the many terminations which happened on the seventh, fourteenth, and twentieth days, afford a proof both of critical days in general, and that these
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are the chief of them. Hereafter I shall mention an analogy that renders the power of the other critical days sufficiently probable.

CXIV.

It appears further, that as, of the terminations which were final and salutary, not a tenth part happened on the noncritical days; and of the terminations which were final and fatal, though the greater number happened on the critical days, yet above a third of them happened on the noncritical; so it would appear, that the tendency of the animal economy is to observe the critical days, and that it is by the operation of some violent and irregular cause that the course of things is sometimes turned to the noncritical.

CXV.

What has been said gives sufficient ground for presuming, that it is the general tendency of the animal economy to determine the periodical movements in fevers to be chiefly on the critical days. At the same time, we must acknowledge it to be a general tendency only; and that, in particular cases, many circumstances may occur to disturb the regular course of it. Thus, though the chief and more remarkable exacerbations in continued fevers happen on the critical days, there are truly exacerbations happening every day; and these,

these, from certain causes, may become considerable and critical. Further, though intermittent fevers are certainly very strongly determined to observe a tertian or quartan period, we know there are circumstances which prevent them from observing these periods exactly, and which render them either anticipating or postponing so much, that the days of paroxysms come to be quite changed ; and it is allowable to suppose, that the like may happen with respect to the exacerbations of continued fevers, so as thereby to disturb the regular appearance of critical days.

A particular instance of this occurs with respect to the sixth day of fevers. In the writings of Hippocrates, there are many instances of terminations happening on the sixth day ; but it is not therefore reckoned among the critical days ; for, of the terminations happening on that day, there is not one which proves finally of a salutary kind ; the greater number are fatal ; and all the rest are imperfect, and followed with a relapse. All this shows, that some violent cause had, in these cases, produced a deviation from the ordinary course of nature ; that the terminations on the sixth day are nothing more than anticipations of the seventh, and therefore a proof of the power of this last.

CXVI.

The doctrine of critical days has been much embarrassed by some dissonant accounts of it,
which

which appear in the writings imputed to Hippocrates. But this may be justly accounted for from these writings being truly the works of different persons, and from the most genuine of them having suffered many corruptions; so that, in short, every thing which is inconsistent with the facts above laid down, may be ascribed to one or other of these causes.

CXVII.

This, further, has especially disturbed the doctrine of critical days, that Hippocrates himself attempted, perhaps too hastily, to establish general rules, and to bring the doctrine to a general theory, drawn from Pythagorean opinions concerning the power of numbers. It is this which seems to have produced the idea of odd days, and of a quaternary and septenary period, doctrines which appear so often in the writings of Hippocrates. These, however, are inconsistent with the facts above laid down; and indeed, as Asclepiades and Celsus have observed, are inconsistent with one another.

CXVIII.

Upon the whole, therefore, it is apprehended, that the critical days above assigned are truly the critical days of Hippocrates, and may be consistently explained in the following manner.

CXIX.

CXIX.

From the universality of tertian or quartan periods in intermittent fevers, we cannot doubt of there being, in the animal economy, a tendency to observe such periods; and the critical days above mentioned are consistent with this tendency of the economy, as all of them mark either tertian or quartan periods. These periods, however, are not promiscuously mixed, but occupy constantly their several portions in the progress of the disease; so that, from the beginning to the eleventh day, a tertian period takes place; and, from the eleventh to the twentieth, and perhaps longer, a quartan period is as steadily observed.

CXX.

What determines the periods to be changed about the eleventh day, we have not clearly perceived; but the fact is certain; for there is no instance of any termination on the thirteenth, that is, the tertian period next following the eleventh; whereas, upon the fourteenth, seventeenth, and twentieth, which mark quartan periods, there are forty three instances of terminations, and fix only on all the intermediate days between these.

This prevalence of a quartan period leaves no room for doubting that the twentieth, and not the twenty first, is the critical day marked
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by Hippocrates, though the last is mentioned as such in the common edition of the Aphorisms, taken from an erroneous manuscript, which Celsus also seems to have copied.

CXXI.

A consistency with the general tendency of the system, renders the series of critical days we have mentioned, probably the true one ; and the only remaining difficulty in finding what we have delivered to be the same with the genuine doctrine of Hippocrates, is the frequent mention of the fourth as a critical day.

It is true there are more instances of terminations happening on this day than on some of those days we have asserted to be truly critical ; but its inconsistency with the more general tendency, and some other considerations, lead us to deny its being naturally a critical day ; and to think, that the instances of terminations, which have really occurred on the fourth day, are to be reckoned among the other irregularities that happen in this matter.

CXXII.

I have thus endeavoured to support the doctrine of critical days, chiefly upon the particular facts to be found in the writings of Hippocrates : And although I might also

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produce many other testimonies of both ancient and modern times ; yet it must be owned, that some of these testimonies may be suspected to have arisen rather from a veneration of Hippocrates, than from accurate observation.

CXXIII.

With respect to the opinions of many moderns who deny the prevalence of critical days, they are to be little regarded ; for the observation of the course of continued fevers is known to be difficult and fallacious ; and therefore the regularity of that course may have often escaped inattentive and prejudiced observers.

CXXIV.

Our own observations amount to this, that fevers with moderate symptoms, generally cases of the synocha, frequently terminate in nine days, or sooner, and very constantly upon one or other of the critical days which fall within that period ; but it is very rare, in this climate, that cases of either the typhus or synochus terminate before the eleventh day ; and, when they do terminate on this day, it is for the most part fatally. When they are protracted beyond this time, I have very constantly found, that their terminations were upon the fourteenth, seventeenth, or twentieth day.

In

In such cases, the salutary terminations are seldom attended with any considerable evacuation. A sweating frequently appears, but is seldom considerable ; and I have hardly ever observed critical and decisive terminations attended with vomiting, evacuations by stool, or remarkable changes in the urine. The solution of the disease is chiefly to be discerned from some return of sleep and appetite, the ceasing of delirium, and an abatement of the frequency of the pulse. By these symptoms we can often mark a crisis of the disease ; but it seldom happens suddenly and entirely ; and it is most commonly from some favourable symptoms occurring upon one critical day, that we can announce a more entire solution upon the next following.

Upon the whole, I am persuaded, that, if observations shall be made with attention, and without prejudice, I shall be allowed to conclude with the words of the learned and sagacious Gaubius, " Fallor, ni sua constiterit
 " HIPPOCRATI auctoritas, GALENO fides,
 " NATURÆ virtus et ordo."

C H A P. VI.

OF THE METHOD OF CURE IN FEVERS.



S E C T. I.

Of the CURE of CONTINUED FEVERS.

CXXV.

AS it is allowed, that, in every fever which has its full course, there is an effort of nature of a salutary tendency, it might be supposed that the cure of fevers should be left to the operations of nature, or that our art should be only directed to support and regulate these operations, and that we should form our indications accordingly. This plan, however, I cannot adopt, because the operations of nature are very precarious, and not so well understood as to enable us to regulate them properly. It appears to me, that trusting to these operations has often given occasion to a negligent and inert practice; and there is reason to believe, that an attention to the operations of nature may be often superseded by art.

CXXVI.

CXXVI.

The plan which to me appears to be most suitable, is that which forms the indications of cure upon the view of obviating the tendency to death ; while, at the same time, the means of executing these indications are directed by a proper attention to the proximate cause of fevers.

Upon this plan, in consequence of what has been laid down above on the subject of the prognostic, we form three general indications in the cure of continued fevers ; and the one or other of these is to be employed according as the circumstances of the fever (CII.) shall direct.

The first therefore is, *To moderate the violence of reaction.*

The second is, *To remove the causes or obviate the effects of debility.* And,

The third is, *To obviate or correct the tendency of the fluids to putrefaction.*

CXXVII.

The first indication may be answered, that is, the violence of reaction may be moderated,

1. By all those means which diminish the action of the heart and arteries.

2. By those means which take off the spasm of the extreme vessels, which we suppose to be the chief cause of violent reaction.

CXXVIII.

The action of the heart and arteries may be diminished,

1. By avoiding or moderating those irritations, which, in one degree or other, are almost constantly applied to the body.

2. By the use of certain sedative powers.

3. By diminishing the tension and tone of the arterial system.

CXXIX.

The irritations (CXXVIII. 1.) almost constantly applied, are the impressions made upon our senses; the exercise of the body and mind; and the taking in of aliments. The avoiding these as much as possible, or the moderating their force, constitute what is rightly called the ANTIPHLOGISTIC REGIMEN, proper to be employed in almost every continued fever.

CXXX.

The conduct of this regimen is to be directed by the following rules and considerations.

1. Impressions on the external senses, as being stimulant to the system, and a chief support of its activity, should be avoided as much as possible; those especially of more constant application, those of a stronger kind, and those which give pain and uneasiness.

No

No impressiion is to be more carefully guarded against than that of external heat ; while, at the same time, every other means of increasing the heat of the body is to be shunned. Both these precautions are to be observed as soon as a hot stage is fully formed, and to be attended to during its continuance ; excepting in certain cases, where a determination to sweating is necessary, or where the stimulant effects of heat may be compensated by circumstances which determine it to produce a relaxation and revulsion.

2. All motion of the body is to be avoided, especially that which requires the exercise of its own muscles ; and that posture of the body is to be chosen which employs the fewest muscles, and which keeps none of them long in a state of contraction. Speaking, as it accelerates respiration, is particularly to be refrained from.

It is to be observed, that every motion of the body is the more stimulant in proportion as the body is weaker.

3. The exercise of the mind also is a stimulus to the body ; so that all impressiions which lead to thought, and those especially which may excite emotion or passion, are to be carefully shunned.

With respect to avoiding impressiions of all kinds, an exception is to be made in the case of a delirium coming on, when the presenting of accustomed objects may have the effect of interrupting and diverting the irregular train of ideas then arising in the mind.

4. The presence of recent aliment in the stomach proves always a stimulus to the system, and ought therefore to be as moderate as possible. A total abstinence for some time may be of service ; but as this cannot be long continued with safety, we must avoid the stimulus of aliment, by choosing that kind which gives the least. We suppose that alimentary matters are more stimulant, according as they are more alkalescent ; and this leads to avoid all animal, and to use vegetable food only.

As our drinks also may prove stimulant, so all aromatic and spirituous liquors are to be avoided ; and, in answering the present indication, all fermented liquors, excepting those of the lowest quality, are to be abstained from.

CXXXI.

Besides these stimulant powers more constantly applied, there are others which, although occasional only, yet, as commonly accompanying fevers, must be attended to and removed.

One is, the sense of thirst, which, as a powerful stimulus, ought always, in one way or other, to be removed.

Another stimulus frequently arises from crudities, or corrupted humours, in the stomach ; and it is to be removed by vomiting, by dilution, or by the use of acids.

A third stimulus often arises from the preternatural retention of fæces in the intestines ; and ought to be removed by frequent laxative glysters.

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A fourth stimulus to be constantly suspected in fevers, is a general acrimony of the fluids, as produced by the increase of motion and heat, joined with an interruption of the excretions. This acrimony is to be obviated or removed by the taking in of large quantities of mild antiseptic liquors.

CXXXII.

The avoiding of irritation in all these particulars, (CXXX. and CXXXI.) constitutes the antiphlogistic regimen absolutely necessary for moderating the violence of reaction; and, if I mistake not, is proper in almost every circumstance of continued fevers; because the propriety and safety of employing stimulants is often uncertain; and because several of those above mentioned, beside their stimulant powers, have other qualities by which they may be hurtful.

It appears to me, that the supposed utility of stimulants, in certain cases of fever, has often arisen from a mistake in having ascribed to their stimulant what really depended upon their antispasmodic power.

CXXXIII.

A second head of the means (CXXVIII. 2.) for moderating the violence of reaction, comprehends certain sedative powers, which
may

may be employed to diminish the activity of the whole body, and particularly that of the sanguiferous system.

The *first* of these to be mentioned is the application of cold.

Heat is the chief support of the activity of the animal system; which is therefore provided in itself with a power of generating heat. But, at the same time, we observe, that this would go to excess, were it not constantly moderated by a cooler temperature in the surrounding atmosphere. When, therefore, that power of the system generating heat is increased, as is commonly the case in fevers, it is necessary not only to avoid all means of increasing it further, but it seems proper also to apply air of a cooler temperature; or at least to apply it more entirely and freely, than in a state of health.

Some late experiments in the small pox and in continued fevers, show that the free admission of cool air to the body is a powerful remedy in moderating the violence of reaction; but what is the mode of its operation, to what circumstances of fever it is peculiarly adapted, or what limitations it requires, I shall not venture to determine, till more particularly instructed by further experience.

CXXXIV.

A *second* sedative power which may be employed in fevers, is that of certain medicines,
known,

known, in the writings on the *Materia Medica*, under the title of REFRIGERANTS.

The chief of these are acids of all kinds, when sufficiently diluted; and they are, in several respects, remedies adapted to continued fevers. Those especially in use are, the Vitriolic and Vegetable; and, on many accounts, we prefer the latter.

CXXXV.

Another set of refrigerants are, the Neutral Salts, formed of the vitriolic, nitrous or vegetable acids; with alkalines, either fixed or volatile. All these neutrals, while they are dissolving in water, generate cold; but as that cold ceases soon after the solution is finished, and as the salts are generally exhibited in a dissolved state, their refrigerant power in the animal body does not at all depend upon their power of generating cold with water. The neutral chiefly employed as a refrigerant, is Nitre; but all the others, compounded as above mentioned, partake more or less of the same quality.

CXXXVI.

Besides these neutrals, some metallic salts also have been employed as refrigerants in fevers; and particularly the Sugar of Lead. But the refrigerant powers of this are not well ascertained; and its deleterious qualities are too well known to admit of its being freely used.

CXXXVII.

Under the *third* general head (CXXVIII. 3.) of the means to be employed for moderating the violence of reaction, are comprehended the several means of diminishing the tension, tone, and activity, of the sanguiferous system. As the activity of this system depends, in a great measure, upon the tone, and this again upon the tension of the vessels, given to them by the quantity of fluids they contain, it is evident, that the diminution of the quantity of these, must diminish the activity of the sanguiferous system.

CXXXVIII.

The quantity of fluids contained in the sanguiferous system, may be diminished most conveniently by the evacuations of blood letting and purging.

CXXXIX.

Nothing is more evident, than that blood letting is one of the most powerful means of diminishing the activity of the whole body, especially of the sanguiferous system; and it must therefore be the most effectual means of moderating the violence of reaction in fevers. Taking this as a fact, I omit inquiring into its mode of operation, and shall only consider in
what

what circumstances of fevers it may be most properly employed.

CXL.

When the violence of reaction, and its constant attendant, a phlogistic diathesis, are sufficiently manifest ; when these constitute the principal part of the disease, and may be expected to continue throughout the whole of it, as in the cases of *synocha* ; then blood letting is the principal remedy, and may be employed as far as the symptoms of the disease may seem to require, and the constitution of the patient will bear. It is, however, to be attended to, that a greater evacuation than is necessary, may occasion a slower recovery, may render the person more liable to a relapse, or may bring on other diseases.

CXLI.

In the case of *synocha*, therefore, there is little doubt about the propriety of blood letting ; but there are other species of fever, as the *synochus*, in which a violent reaction and phlogistic diathesis appear, and prevail during some part of the course of the disease ; while, at the same time, these circumstances do not constitute the principal part of the disease, nor are to be expected to continue during the whole course of it ; and it is well known, that, in many cases, the state of violent
reaction

reaction is to be succeeded, sooner or later, by a state of debility, from the excess of which the danger of the disease is chiefly to arise. It is, therefore, necessary, that, in many cases, blood letting should be avoided; and even although during the inflammatory state of the disease, it may be proper, it will be necessary to take care that the evacuation be not so large as to increase the state of debility which is to follow.

CXLII.

From all this it must appear, that the employing blood letting, in certain fevers, requires much discernment and skill, and is to be governed by the consideration of the following circumstances :

1. The nature of the prevailing epidemic.
2. The nature of the remote cause.
3. The season and climate in which the disease occurs.
4. The degree of phlogistic diathesis present.
5. The period of the disease.
6. The age, vigour, and plethoric state of the patient.
7. The patient's former diseases and habits of blood letting.
8. The appearance of the blood drawn out.
9. The effects of the blood letting that may have been already practised.

CXLIII.

CXLIII.

When, after the consideration of these circumstances, blood letting is determined to be necessary, it should be observed, that it is more effectual, according as the blood is more suddenly drawn off, and as the body is at the same time more free from all irritation, and consequently when in a posture in which the fewest muscles are in action.

CXLIV.

Another evacuation whereby the quantity of fluids contained in the body can be considerably diminished, is that of Purging.

CXLV.

If we consider the quantity of fluids constantly present in the cavity of the intestines, and the quantity which may be drawn from the innumerable excretories that open into this cavity, it will be obvious, that a very great evacuation can be made by purging ; and, if this be done by a stimulus applied to the intestines, without being at the same time communicated to the rest of the body, it may, by emptying both the cavity of the intestines, and the arteries which furnish the excretions poured into it, induce a considerable relaxation in the whole system ; and therefore, purging
seems

seems to be a remedy suited to moderate the violence of reaction in fevers.

CXLVI.

But it is to be observed, that, as the fluid drawn from the excretories opening into the intestines, is not all drawn immediately from the arteries, as a part of it is drawn from the mucous follicles only; and as what is even more immediately drawn from the arteries, is drawn off slowly; so the evacuation will not, in proportion to its quantity, occasion such a sudden depletion of the red vessels as blood letting does; and therefore cannot operate so powerfully in taking off the phlogistic diathesis of the system.

CXLVII.

At the same time, as this evacuation may induce a considerable degree of debility; so, in those cases in which a dangerous state of debility is likely to occur, purging is to be employed with a great deal of caution; and more especially as the due measure of the evacuation is more difficult to be applied than in the case of blood letting.

CXLVIII.

As we shall presently have occasion to observe, that it is of great importance, in the
cure

cure of fevers, to restore the determination of the blood to the vessels on the surface of the body ; so purging, as in some measure taking off that determination, seems to be an evacuation not well adapted to the cure of fevers.

CXLIX.

If, notwithstanding these doubts, (CXLVI. CXLVII. and CXLVIII.) it shall be asserted, that purging, even from the exhibition of purgatives, has often been useful in fevers ; I would beg leave to maintain, that this has not happened from a large evacuation ; and, therefore, not by moderating the violence of reaction, excepting in the case of a more purely inflammatory fever, or of exanthemata of an inflammatory nature. In other cases of fever, I have seen a large evacuation by purging, of mischievous consequence ; and if, upon occasion, a more moderate evacuation has appeared to be useful, it is apprehended to have been only by taking off the irritation of retained fæces, or by evacuating corrupted humours which happened to be present in the intestines ; for both of which purposes, frequent laxatives may be properly employed.

CL.

Another set of means (CXXVII. 2.) for moderating the violence of reaction in fevers, are those suited to take off the spasm of the
extreme

extreme vessels, which we believe to be the irritation that chiefly supports the reaction.

Though I have put here this indication of taking off the spasm of the extreme vessels, as subordinate to the general indication of moderating the violence of reaction ; it is however to be observed here, that as fever universally consists in an increased action of the heart, either in frequency or in force, which in either case is supported by a spasm of the extreme vessels, so the indication for removing this is a very general one, and applicable in almost every circumstance of fever, or at least with a few exceptions, to be taken notice of hereafter.

CLI.

For taking off the spasm of the extreme vessels, the means to be employed are either internal or external.

CLII.

The internal means (CLI.) are,

1. Those which determine the force of the circulation to the extreme vessels on the surface of the body, and, by restoring the tone and activity of these vessels, may overcome the spasm on their extremities.

2. Those medicines which have the power of taking off spasm in any part of the system, and which are known under the title of AN-TISPASMODICS.

CLIII.

CLIII.

Those remedies which are fit to determine to the surface of the body, are,

1. DILUENTS.
2. NEUTRAL SALTS.
3. SUDORIFICS.
4. EMETICS.

CLIV.

Water enters, in a large proportion, into the composition of all the animal fluids, and a large quantity of it is always diffused through the whole of the common mass. Indeed, in a sound state, the fluidity of the whole mass depends upon the quantity of water present in it. Water, therefore, is the proper diluent of our mass of blood; and other fluids are diluent only in proportion to the quantity of water they contain.

CLV.

Water may be said to be the vehicle of the several matters which ought to be excerned; and in a healthy state the fulness of the extreme vessels, and the quantity of excretions, are nearly in proportion to the quantity of water present in the body. In fever, however, although the excretions are in some measure interrupted, they continue in such quantity

quantity as to exhale the more fluid parts of the blood ; and while a portion of them is at the same time necessarily retained in the larger vessels, the smaller and the extreme vessels, both from the deficiency of fluid, and their own contracted state, are less filled, and therefore allowed to remain in that condition.

CLVI.

To remedy this contracted state, nothing is more necessary than a large supply of water or watery fluids, taken in by drinking or otherwise ; for as any superfluous quantity of water is forced off by the several excretories, such a force applied, may be a means of dilating the extreme vessels, and of overcoming the spasm affecting their extremities.

CLVII.

Accordingly the throwing in of a large quantity of watery fluids has been, at all times, a remedy much employed in fevers ; and in no instance more remarkably, than by the Spanish and Italian physicians, in the use of what they call the *Diæta aquea*.

CLVIII.

This practice consists in taking away every other kind of aliment and drink, and in giving in divided portions every day, for several days

days together, fix or eight pounds of plain water, generally cold, but sometimes warm. All this, however, is to be done only after the disease has continued for some time, and, at least, for a week.

CLIX.

A second means (CLIII. 2.) of determining to the surface of the body, is by the use of neutral salts. These, in a certain dose taken into the stomach, produce, soon after, a sense of heat upon the surface of the body ; and, if the body be covered close and kept warm, a sweat is readily brought out. The same medicines, taken during the cold stage of a fever, very often put an end to the cold stage, and bring on the hot ; and they are also remarkable for stopping the vomiting which so frequently attends the cold stage of fevers. All this shows, that neutral salts have a power of determining the blood to the surface of the body, and may therefore be of use in taking off the spasm which in fevers subsists there.

CLX.

The neutral most commonly employed in fevers, is that formed of an alkali with the native acid of vegetables ; but all the other neutrals have more or less of the same virtue ; and perhaps some of them, particularly the ammoniacal salts, possess it in a stronger degree.

CLXI.

CLXI.

As cold water taken into the stomach, often shows the same diaphoretic effects with the neutral salts, it is probable that the effect of the latter depends upon their refrigerant powers mentioned above, (CXXXIV.) What is the effect of the neutral salts, given when they are forming and in a state of effervescence? It is probable that this circumstance may increase the refrigerant power of these salts, and may introduce into the body a quantity of fixed air; but for these purposes it would seem proper to contrive that the whole of the effervescence should take place in the stomach.

CLXII.

A third means (CLIII. 3.) of determining to the surface of the body, and taking off the spasm subsisting there, is by the use of sudorific medicines, and of sweating.

CLXIII.

The propriety of this remedy has been much disputed; and specious arguments may be adduced both for and against the practice.

In favour of the practice, it may be said;

1. That, in healthy persons, in every case of increased action of the heart and arteries, a sweating takes place, and is seemingly the means

means of preventing the bad effects of such increased action.

2. That, in fevers, their most usual solution and termination is by spontaneous sweating.

3. That, even when excited by art, it has been found manifestly useful, at certain periods, and in certain species of fever.

CLXIV.

Upon the other hand, it may be urged against the practice of sweating ;

1. That as in fevers a spontaneous sweating does not immediately come on, so there must be in these some circumstances different from those in the state of health, and which may therefore render it doubtful whether the sweating can be safely excited by art.

2. That, in many cases, the practice has been attended with bad consequences. The means commonly employed have a tendency to produce an inflammatory diathesis ; which, if not taken off by the sweat following their use, must be increased with much danger. Thus sweating employed to prevent the accessions of intermitting fevers, has often changed them into a continued form, which is always dangerous.

3. The utility of the practice is further doubtful, because sweating, when it happens, does not always give a final determination ; as must be manifest in the case of intermit-
tents,

tents, as well as in many continued fevers, which are sometimes in the beginning attended with sweatings that do not prove final ; and, on the contrary, whether spontaneous or excited by art, seem often to aggravate the disease.

CLXV.

From these considerations, it is extremely doubtful if the practice of sweating can be admitted very generally ; but, at the same time, it is also doubtful, if the failure of the practice, or the mischiefs said to have arisen from it, have not been owing to the improper conduct of the practitioner.

With respect to this last, it is almost agreed among physicians,

1. That sweating has been generally hurtful when excited by stimulant, heating, and inflammatory medicines.

2. That it has been hurtful when excited by much external heat, and continued with a great increase of the heat of the body.

3. That it is always hurtful when it does not soon relieve, but rather increases, the frequency and hardness of the pulse, the anxiety and difficulty of breathing, the headach, and delirium.

4. That it is always hurtful if it be urged when the sweat is not fluid, and when it is partial, and on the superior parts of the body only.

CLXVI.

CLXVI.

In these cases, it is probable, that either an inflammatory diathesis is produced, which increases the spasm on the extreme vessels ; or that, from other causes, the spasm is too much fixed to yield easily to the increased action of the heart and arteries ; and, upon either supposition, it must be obvious, that urging the sweat, as ready to produce a hurtful determination to some of the internal parts, may be attended with very great danger.

CLXVII.

Though the doubts started (CLXIV.) are to be attended to ; and although the practices (CLXV.) having been found hurtful, are therefore to be rejected ; it still remains true,

1. That sweating has certainly been often useful in preventing the accession of fevers, when the times of this have been certainly foreseen, and a proper conduct employed.

2. That, even after fevers have in some measure come on, sweating, when properly employed, either at the very beginning of the disease, or during its approach and gradual formation, has often prevented their further progress.

3. That, even after pyrexia have continued for some time, sweating has been successfully employed in curing them, as particularly in the case of rheumatism.

G

4. That

4. That certain fevers, produced by a very powerful sedative contagion, have been generally treated, so far as we yet know, most successfully by sweating.

CLXVIII.

These instances (CLXVII.) are in favour of sweating, but give no general rule; and it must be left to further experience to determine how far any general rule can be established in this matter. In the mean time, if the practice of sweating is to be attempted, we can venture to lay down the following rules for the conduct of it.

1. That it should be excited without the use of stimulant inflammatory medicines.

2. That it should be excited with as little external heat, and with as little increase of the heat of the body, as possible.

3. That, when excited, it should be continued for a due length of time, not less than twelve hours, and sometimes for twenty four or forty eight hours; always, however, providing that it proceeds without the circumstances mentioned (CLXV. 3. 4.)

4. That for some part of the time, and as long as the person can easily bear, it should be carried on without admitting of sleep.

5. That it should be rendered universal over the whole body; and, therefore, particularly, that care be taken to bring the sweating to the lower extremities.

6. That

6. That the practice should be rendered safer by moderate purging, excited at the same time.

7. That it should not be suddenly checked by cold any how applied to the body.

CLXIX.

When attention is to be given to these rules, the sweating may be excited, 1. By warm bathing, or a fomentation of the lower extremities. 2. By frequent draughts of tepid liquors, chiefly water, rendered more grateful by the addition of a light aromatic, or more powerful by that of a small quantity of wine. 3. By giving some doses of neutral salts. 4. Most effectually, and perhaps most safely, by a large dose of an opiate, joined with a portion of neutral salts, and of an emetic.

In what cases may cold water, thrown into the stomach in large quantities, be employed to excite sweating? See CELSUS, Lib. III. chap. vii.—ix.

CLXX.

The fourth means (CLIII. 1.) of determining to the surface of the body, and thereby taking off the spasm affecting the extreme vessels, is by the use of emetics.

CLXXI.

Emetics, and particularly antimonial emetics, have been employed in the cure of fevers ever since the introduction of chemical medicines ; but, for a long time, they were employed by chemists and chemical practitioners only ; and although of late the use of them has become very general, their efficacy is still disputed, and their manner of operating is not commonly explained.

CLXXII.

Vomiting is, in many respects, useful in fevers ; as it evacuates the contents of the stomach ; as it emulges the biliary and pancreatic ducts ; as it evacuates the contents of the duodenum, and perhaps also of a larger portion of the intestines ; as it agitates the whole of the abdominal viscera, expedes the circulation in them, and promotes their several secretions ; and, lastly, as agitating also the viscera of the thorax, it has like effects there. All these several effects are, in many cases and circumstances of fever, procured with advantage ; but do not properly fall under our view here, where we are to consider only the effect of vomiting in determining to the surface of the body.

CLXXIII.

CLXXIII.

This effect we do not impute to the exercise of vomiting in agitating the whole frame ; but to the particular operation of emetics upon the muscular fibres of the stomach, whereby they excite the action of the extreme arteries on the surface of the body, so as thereby effectually to determine the blood into these vessels, remove the atony, and take off the spasm affecting them.

CLXXIV.

That such is the power of emetics, will appear from the several considerations mentioned above (XLIV.) ; and, therefore, that they are remedies well suited to the cure of fevers.

CLXXV.

Emetics, for that purpose, are administered in two different ways ; that is, either in such doses as may excite full and repeated vomitings ; or in such doses as may excite sickness and nausea only, with little or no vomiting at all.

CLXXVI.

Full vomiting is best suited to the several purposes mentioned CLXXII. ; and is also

well suited to determine to the surface of the body, so as thereby to obviate the atony and spasm which lay the foundation of fever. Thus vomiting, excited a little before the expected accession of the paroxysm of an intermittent, has been found to prevent the paroxysm altogether. And it has been observed also, that, when contagion has been applied to a person, and first discovers its operation, a vomit given will prevent the fever, which was otherwise to have been expected. See *LIND on Fevers and Infection*.

CLXXVII.

These are advantages to be obtained by exciting vomiting at the first approach of fevers, or of the paroxysms of fevers ; and after fevers are formed, vomiting may also be employed, to take off, perhaps entirely, the atony and spasm, or at least to moderate these, so that the fever may proceed more gently and safely.

CLXXVIII.

It is seldom, however, that vomiting is found to produce a final solution of fevers ; and, after they are once formed, it is commonly necessary to repeat the vomiting several times ; but this is attended with inconvenience, and sometimes with disadvantage. The operation of full vomiting commonly soon ceases, and the exercise of vomiting is often a debilitating power ;

power ; and therefore, when the vomiting does not remove the atony and spasm very entirely, it may give occasion to their recurring with greater force.

CLXXIX.

For these reasons, after fevers are fully formed, physicians have thought proper to employ emetics in nauseating doses only. These are capable of exciting the action of the extreme vessels, and their operation is more permanent. At the same time, they often show their power by exciting some degree of sweat ; and their operation is rendered more safe, by their commonly producing some evacuation by stool.

CLXXX.

Such are the advantages to be procured by nauseating doses of emetics ; and it only remains to mention, what are the medicines most fit to be employed in that manner, what are the most proper times for exhibiting, and what is the best manner of administering them.

CLXXXI.

The emetics at present chiefly in use, are, Ipecacuanha and Antimony.

The former may be employed for every purpose of emetics, particularly those mentioned CLXXII. It may likewise be em-

ployed, either in larger or smaller doses, for determining to the surface of the body ; but, even in very small doses, it so readily excites vomiting, as to be with difficulty employed for the purpose of nauseating only ; and, however employed, there is reason to believe, that its effects are less permanent, and less powerfully communicated from the stomach to the rest of the system, than those of Antimony.

CLXXXII.

This, therefore, is generally preferred ; and its preparations, seemingly various, may all be referred to two heads ; the *one* comprehending those in which the reguline part is in a condition to be acted upon by acids ; and therefore, on meeting with acids in the stomach, becomes active ; and the *other* comprehending those preparations in which the reguline part is already joined with an acid, rendering it active.

CLXXXIII.

Of each kind there are great numbers, but not differing essentially from one another. It will be enough for us to compare the Calx Antimonii Nitrata of the Edinburgh Dispensatory with the Emetic Tartar of the same. The former, as I judge, is nearly the same with what is called James's Powder. Which of these is best suited to the cure of fevers, as
above

above explained, seems doubtful ; but it appears to me, that, although the former may have some advantages from its slower operation, and may thereby seem to be more certainly sudorific and purgative, yet the uncertainty of its dose renders it inconvenient, has often given occasion to the timid to be disappointed, and to the bold to do mischief. On the other hand, the dose of the Emetic Tartar can be exactly ascertained ; and I think it may be exhibited in such a manner as to produce all the advantages of the other.

CLXXXIV.

Whichsoever of these preparations be employed, I judge the most proper time for exhibiting them, to be the time of accessions ; or a little before, when that can be certainly known. In continued fevers, the exacerbations are not always very observable ; but there is reason to think, that one commonly happens about noon, or soon after it, and another in the evening ; and that these, therefore, are the most proper times for exhibiting emetics.

CLXXXV.

With respect to the manner of administration, that of the Calx Nitrata is simple, as the whole of what is judged a proper dose is given

at once, and no more can properly be given till the time of the next accession.

The administration of the Emetic Tartar is different. It is to be given in small doses, not sufficient to excite vomiting ; and these doses, after short intervals, are to be repeated for several times, till sickness, nausea, and some, but not much, vomiting, come on. The difference of this administration must depend upon the dose, and the length of the intervals at which it is given. If it be intended that the medicine should certainly operate by stool, the doses are made small, and the intervals long. On the contrary, when vomiting is proper, or when much purging ought to be avoided, and therefore some vomiting must be admitted, the doses are made larger and the intervals shorter.

CLXXXVI.

With respect to both kinds of preparations, the repetition is to be made at the times of accession, but not very often ; for if the first exhibitions, duly managed, have little effect, it is seldom that the after exhibitions have much ; and it sometimes happens that the repeated vomitings, and especially repeated purgings, do harm by weakening the patient.

CLXXXVII.

The other set of internal medicines, (CLII. 2.) which I suppose may be useful in taking
off

off the spasm of the extreme vessels, are those named Antispasmodic. How many of these may be properly employed, I am uncertain ; and their mode of operation is involved in great obscurity. It is certain, however, that opium, camphor, musk, and perhaps some others, have been employed in fevers with advantage ; but the circumstances in which they are especially proper and safe, I find difficult to ascertain ; and therefore cannot venture here to lay down any general doctrine concerning them.

CLXXXVIII.

The external means (CLI.) suited to take off the spasm of the extreme vessels, are BLISTERING and WARM BATHING.

CLXXXIX.

What are the effects of Blistering, so frequently employed in fevers, is not yet agreed upon among physicians ; and many different opinions have been maintained on this subject, drawn not only from reasoning, but also from presumed experience. I must not, however, enter into controversy ; but shall deliver my own opinion in a few words.

CXC.

I am persuaded, that the small quantity of cantharides absorbed from a blistering plaster,

is not sufficient to change the consistence of the mass of blood ; and therefore that such a quantity can neither do good, by resolving phlogistic lentor, if it exists ; nor do harm, by increasing the dissolution of the blood arising from a putrid tendency in it. I therefore neglect entirely the effects of cantharides upon the fluids.

CXCI.

The inflammation produced by the application of cantharides to the skin, affords a certain proof of their stimulant power ; but, in many persons, the effect of that stimulus is not considerable ; in many, it is not communicated to the whole system ; and, even when the effect does take place in the whole system, it seems to be taken off, very entirely, by the effusion and evacuation of serum from the blistered part. I conclude, therefore, that neither much good is to be expected, nor much harm to be apprehended, from the stimulant power of blistering ; and the certainty of this conclusion is established, by the great benefit arising from the proper practice of blistering in inflammatory diseases.

CXCII.

Much has been imputed to the evacuation occasioned by blistering ; but it is never so considerable as to affect the whole system ; and therefore can neither, by sudden depletion,
tion,

tion, relax the sanguiferous vessels, nor, by any revulsion, affect the general distribution of the fluids.

CXCIII.

The evacuation, however, is so considerable as to affect the neighbouring vessels; and the manifest utility of blistering near the part affected, in inflammatory diseases, leads me to believe, that blistering, by deriving to the skin, and producing an effusion there, relaxes the spasm of the deeper seated vessels. I apprehend it to be in this manner that the tumour of a joint, from an effusion into the cellular texture under the skin, takes off the rheumatic pain affecting that joint.

CXCIV.

Analogous to this, it may be held, that the good effects of blistering in continued fevers, arise from its relaxing the spasm of the extreme vessels, by a communication of the blistered part with the rest of the skin; and this is illustrated by the effect of blistering in colic and dysentery.

CXCv.

It appears to me, that blistering may be employed at any period of continued fevers; but that it will be of most advantage in the
advanced

advanced state of such fevers, when, the reaction being weaker, all ambiguity from the stimulant power of blistering is removed, and when it may best concur with other circumstances tending to a final solution of the spasm.

CXCVI.

From the view of this matter given in (CXCI. and CXCI.) it will appear, that the part of the body to which blisters ought to be applied, is indifferent, excepting upon the suspicion of topical affection, when the blistering ought to be made as near as possible to the part affected.

CXCVII.

Whether SINAPISMS, and other RUBEFACIENTIA, act in a manner analogous to what we have supposed of blistering, may be doubtful; but their effects in rheumatism, and other inflammatory diseases, render it probable.

CXCVIII.

The other external means of taking off the spasm of the extreme vessels, is Warm Bathing. This was frequently, and in various circumstances, employed by the ancients; but till very lately has been neglected by modern physicians. As the heat of the bath stimulates

lates the extreme vessels, and, with the concurrence of moisture, also relaxes them, it seems to be a safe stimulus, and well suited to take off the spasm affecting them.

CXCIX.

It may be applied to the whole body by immersion; but this is, in many respects, inconvenient; and whether some of the inconveniences of immersion might not be avoided by a vapour bath, I have not learned from experience. I know, however, from much experience, that most of the purposes of warm bathing can be obtained by a fomentation of the legs and feet, if properly administered, and continued for a due length of time, which ought not to be less than an hour.

CC.

The marks of the good effects of such a fomentation, are, the patient's bearing it easily, its relieving delirium, and inducing sleep.

CCI.

Having now considered the several means of satisfying the first general indication in the cure of fevers, I proceed to the second, (CXXVI.), which is, *To remove the cause, or obviate the effects, of debility.*

CCII.

CCII.

Most of the sedative powers inducing debility, cease to act soon after they have been first applied; and, therefore, the removing them is not an object of our present indication. There is only one which may be supposed to continue to act for a long time; and that is, the contagion applied; but we know nothing of the nature of contagion that can lead us to any measures for removing or correcting it. We know only its effects as a sedative power inducing debility, or as a ferment inducing a tendency to putrefaction in the fluids. The obviating the latter will be considered under our third general indication, and the former alone is to be considered here.

CCIII.

The debility induced in fevers by contagion, or other causes, appears especially in the weaker energy of the brain; but in what this consists, or how it may be directly restored, we do not well know. As Nature, however, does, seemingly for this purpose, excite the action of the heart and arteries, we ascribe the continuance of debility to the weaker reaction of the sanguiferous system; so that the means to be employed for obviating debility, are immediately directed to support and increase the action of the heart and arteries; and the remedies used are TONICS OR STIMULANTS.

CCIV.

CCIV.

In contagious diseases, both from the effects which appear, and from dissections, it is known, that the tone of the heart and arteries is considerably diminished; and that tonic remedies, therefore, are properly indicated.

These are to be considered as of two kinds; the first being the power of cold, the second that of tonic medicines.

CCV.

The power of cold, as a tonic, I have mentioned above (XC.); and it is employed, in fevers, in two ways; either as the cold matter is thrown into the stomach, or as it is applied to the surface of the body.

CCVI.

As it has been shown above, that the tonic power of cold can be communicated from any one part to every other part of the system; so it will readily be allowed, that the stomach is a part as fit for this communication as any other; and that cold drink, taken into the stomach, may, therefore, prove an useful tonic in fevers.

CCVII.

This the experience of all ages has confirmed; but, at the same time, it has been frequently

quently observed, that, in certain circumstances, cold drink, taken into the stomach, has proved very hurtful; and, therefore, that the use of cold drink in fevers requires some limitations. What these limitations should be, and what are all the circumstances which may forbid the use of cold drink, is difficult to determine; but it seems clearly forbidden, in all cases where a phlogistic diathesis prevails in the system, and more especially when there are topical affections of an inflammatory nature.

CCVIII.

The other method of employing cold as a tonic, is, by applying it to the surface of the body. The application of cold air to the surface of the body, as a refrigerant power fit to moderate the violence of reaction, I have spoken of above (CXXXIII.); but probably it may also be considered here as a tonic, and useful in cases of debility.

CCIX.

Not only cool air, but cold water also, may be applied to the surface of the body, as a refrigerant, and perhaps as a tonic. The ancients frequently applied it with advantage, to particular parts, as a tonic; but it is a discovery of modern times, that in the case of putrid fevers, attended with much debility, the body may be washed all over with cold water,

CCX.

CCX.

This was first practised at Breslaw in Silesia, as appears from a dissertation, under the title of *Epidemia verna quæ Wratislaviam, anno 1737, afflixit*, to be found in the appendix to the *Acta Nat. Curios.* Vol. X. And from other writers we find, that the practice has passed into some of the neighbouring countries; although in this island, so far as I know, we have hitherto had no experience of it.

CCXI.

The medicines which have been employed in fevers, as tonics, are various. If the *Saccharum Saturni* has been found useful, it is, probably, as a tonic, rather than as a refrigerant; and the *Ens Veneris*, or other preparations of iron which have been employed, can act as tonics only. The preparations of copper, from their effects in epilepsy, are presumed to possess a tonic power; but, whether their use in fevers be founded upon their tonic or their emetic powers, may be uncertain. The use of arsenic and of alum, in intermittent fevers, seems manifestly to depend upon their tonic power. And, upon the whole, there may occur cases of continued fevers, which may be cured by tonics taken from the fossil kingdom; but the use of these has been rare,

as well as the effects uncertain ; and physicians have employed, more commonly, the vegetable tonics.

CCXII.

A great variety of these has been employed in the cure of intermittent fevers ; but how many of them may be employed in continued fevers, or in what circumstances of these fevers, is not well ascertained ; and I shall now only consider the question with respect to the most celebrated of these tonics, the Peruvian Bark.

CCXIII.

This bark has been commonly considered as a specific, or as a remedy of which the operation was not understood. But it is certainly allowable to inquire into this matter ; and I apprehend it may be explained.

CCXIV.

To this purpose it is to be remarked, that as, in many cases, the effects of the bark are perceived soon after its being taken into the stomach, and before it can possibly be conveyed to the mass of blood, we may conclude, that its effects do not arise from its operating on the fluids ; and must, therefore, depend upon its operating on the nerves of the stomach,

ach, and being thereby communicated to the rest of the nervous system. This operation seems to be a tonic power, the bark being a remedy in many cases of debility, particularly in gangrene; and, as the recurrence of the paroxysms of intermittent fevers depends upon a recurrence of atony, (XXXV. and XXXVI.); so probably the bark, by its tonic power, prevents the recurrence of these paroxysms; and this is greatly confirmed by observing, that many other tonic medicines answer the same purpose.

CCXV.

If the operation of the bark may be thus explained, from its possessing a tonic power, it is easy to perceive why it is improper when a phlogistic diathesis prevails; and, from the same view, we can ascertain in what cases of continued fever it may be admitted. These are either after considerable remissions have appeared, when it may be employed to prevent the return of exacerbations, on the same footing that it is used in intermittent fevers, or in the advanced state of fevers, when all suspicion of an inflammatory state is removed, and a general debility prevails in the system; and its being then employed is sufficiently agreeable to the present practice.

CCXVI.

CCXVI.

With respect to the use of the bark, it is proper to add, that good effects are to be expected from it, almost only when given in substance and in large quantity.

CCXVII.

Another set of medicines to be employed for obviating debility and its effects, are the direct stimulants (CCIII.). These, in some measure, increase the tone of the moving fibres; but they are different from the tonics, as more directly exciting and increasing the action of the heart and arteries. This mode of their operation renders the use of them ambiguous; and when an inflammatory diathesis is present, as so often happens in the beginning of fevers, the effects of these stimulants may be very hurtful; but it still remains probable, that, in the advanced state of fevers, when debility prevails, they may be useful.

CCXVIII.

What are the stimulants that may be most properly employed, I am uncertain, as the use of them in this age has been rare; but I am disposed to believe that, of all kinds, wine is the best.

CCXIX.

CCXIX.

Wine has the advantage of being grateful to the palate and stomach, and of having its stimulant parts so much diluted, that it can be conveniently given in small doses ; so that it may be employed with sufficient caution ; but it is of little service, unless taken pretty largely.

CCXX.

It may be supposed, and on good grounds, that wine has an operation analogous to that of opium and some other narcotic medicines. It may indeed be said, that we can distinctly mark its stimulant power only, which renders its effects in the phrenitic delirium manifestly hurtful, and, in the mild delirium, depending on debility, as remarkably useful. But in all this the analogy with opium is still obvious ; and it is probable, that both wine and opium are more useful by their sedative and antispasmodic, than by their stimulant powers.

CCXXI.

These are the means of answering our second general indication (CXXVI. 2.) ; and I now proceed to the third, which is, *To obviate or to correct the tendency of the fluids to putrefaction.*

CCXXII.

CCXXII.

This may be done,

1. By avoiding any new application of putrid or putrescent matter.
2. By evacuating the putrid or putrescent matter already present in the body.
3. By correcting the putrid or putrescent matter remaining in the body.
4. By supporting the tone of the vessels, and thereby resisting further putrefaction, or obviating its effects.

CCXXIII.

The further application of putrid or putrescent matter may be avoided,

1. By removing the patient from places filled with corrupted air.
2. By correcting the air from which he cannot be removed.
3. By preventing the accumulation of the patient's own effluvia, by a constant ventilation, and by a frequent change of bed clothes and body linen.
4. By the careful and speedy removal of all excremental matters from the patient's chamber.
5. By avoiding animal food, or correcting it.

CCXXIV.

CCXXIV.

The putrid or putrescent matter, already present in the body, may be evacuated, partly by evacuating frequently the contents of the intestines ; and more effectually still, by supporting the excretions of perspiration and urine, by the plentiful use of diluents.

CCXXV.

The putrid or putrescent matter, remaining in the body, may be rendered more mild and innocent by the use of diluents ; or may be corrected by the use of antiseptics. These last are of many and various kinds ; but which of them are conveniently applicable, or more particularly suited to the case of fevers, is not well ascertained. Those most certainly applicable and useful, are acescent aliments, acids of all kinds, neutral salts, and fixed air.

CCXXVI.

The progress of putrefaction may be considerably retarded, and its effects obviated, by supporting the tone of the vessels ; and this may be done by tonic remedies ; the chief of which are, Cold, and Peruvian Bark, both sufficiently treated of above, (CCV. *et seq.*)

CCXXVII.

I have now finished the consideration of the three general indications to be formed in the cure of continued fevers ; and have mentioned most of the remedies which have been, upon any occasion, employed in this business. It was necessary, in the first place, to consider these indications and remedies separately, and to explain the operation of the latter more generally ; but, from what has been now delivered, compared with what was said above, concerning the difference of fevers, and the signification of their several symptoms in forming the prognostic, I expect it will not be difficult to assign the indication, and to select and combine the several remedies mentioned, so as to adapt them to the several species and circumstances of continued fevers.

I think

I think it may be useful for my Readers to have the whole of the cure of CONTINUED FEVERS brought under one View, as in the following TABLE.

IN THE CURE OF CONTINUED FEVERS,

The INDICATIONS are,

I. *To moderate the violence of reaction.*

Which may be done, by

1. Diminishing the action of the heart and arteries, by
 - A. Avoiding or moderating those irritations which are almost constantly applied to the body ; as,
 - a. The impressions made upon our senses, particularly,
 - α . Increased heat, whether arising from
 - $\alpha\alpha$. External heat, or,
 - $\beta\beta$. The accumulation of the heat of the body.
 - b. The exercise of the body,
 - c. The exercise of the mind,
 - d. The taking in of aliment.
 - e. Particular irritations arising from
 - α . The sense of thirst,
 - β . Crudities, or corrupted humours, in the stomach,
 - γ . The preternatural retention of fæces,
 - δ . A general acrimony of the fluids.
 - B. Employing certain sedative powers ; as,
 - a. Cold,
 - b. Refrigerants ; the chief of which are,
 - α . Acids of all kinds,
 - β . Neutral salts,
 - γ . Metallic salts.

C. Diminishing

- C. Diminishing the tension and tone of the arterial system, by
- a. Bloodletting,
 - b. Purging.
2. Taking off the spasm of the extreme vessels, by
- A. Internal means ; which are,
 - a. Those remedies which determine to the surface, as,
 - α . Diluents,
 - β . Neutral salts,
 - γ . Sudorifics,
 - δ . Emetics.
 - b. Those remedies named antispasmodics.
 - B. External means ; as,
 - a. Blistering,
 - b. Warm bathing.
- II. *To remove the causes, or obviate the effects, of debility, by*
1. Supporting and increasing the action of the heart and arteries, by
 - A. Tonics, as,
 - a. Cold,
 - b. Tonic medicines, which are either,
 - α . Fossil, as,
 - $\alpha\alpha$. Saccharum saturni, &c. or,
 - β . Vegetable, as,
 - $\alpha\alpha$. Peruvian bark.
 - B. Stimulants, as,
 - a. Aromatics, &c.
 - b. Wine.
- III. *To obviate or correct the tendency of the fluids to putrefaction, by*
1. Avoiding the application of putrid or putrescent matter, by
 - A. Removing the patient from places filled with corrupted air.
 - B. Correcting the air, from which he cannot be removed.
 - C. Avoiding

- C. Avoiding the accumulation of the patient's own effluvia, by
 - a. A constant ventilation,
 - b. Frequently changing the bed clothes and body linen.
- D. Removing carefully and speedily all excremental matters.
- E. Avoiding animal food, or correcting it.
- 2. Evacuating the putrid or putrescent matter already present in the body, by
 - A. Evacuating frequently the intestines.
 - B. Supporting the excretions of perspiration and urine, by
 - a. Diluents,
 - b. Neutral salts.
- 3. Correcting the putrid or putrescent matter remaining in the body, by
 - A. Diluents,
 - B. Antiseptics,
 - C. Fixed air.
- 4. Resisting farther putrefaction, or obviating its effects, by
 - Supporting the tone of the vessels, by
Tonic remedies.

S E C T. II.

Of the CURE of INTERMITTENT FEVERS.

CCXXVIII.

It still remains to consider the cure of intermittent fevers ; and, with respect to these, we form also three general indications.

1. *In the time of intermission, to prevent the recurrence of paroxysms.*

H 3

2. *In*

2. *In the time of paroxysms, to conduct these so as to obtain a final solution of the disease.*

3. *To take off certain circumstances which might prevent the fulfilling of the two first indications.*

CCXXIX.

The first indication may be answered in two ways :

1. By increasing the action of the heart and arteries some time before the period of accession, and supporting that increased action till the period of the accession be over, so as thereby to prevent the recurrence of the atony and spasm of the extreme vessels which give occasion to the recurrence of paroxysms.

2. Without increasing the action of the heart and arteries, the recurrence of paroxysms may be prevented, by supporting the tone of the vessels, and thereby preventing atony, and the consequent spasm.

CCXXX.

For the purpose mentioned in (CCXXIX. 1.), the action of the heart and arteries may be increased ;

1. By various stimulant remedies, internally given, or externally applied, and that without exciting sweat.

2. By the same remedies, or others so managed as to excite sweating, and to support that
sweating

sweating till the period of accession be for some time past.

3. By nauseating doses of emetics, given about an hour before the time of accession, thereby supporting and increasing the tone and action of the extreme vessels.

CCXXXI.

The tone of the extreme vessels may be supported without increasing the action of the heart and arteries (CCXXIX. 2.), by various tonic medicines; as,

1. Astringents alone.
2. Bitters alone.
3. Astringents and bitters conjoined.
4. Astringents and aromatics conjoined.
5. Certain metallic tonics.
6. Opiates.

Lastly, An impression of horror.

A good deal of exercise, and as full a diet as the condition of the patient's appetite and digestion may allow of, will be proper during the time of intermission, and may be considered as belonging to this head.

CCXXXII.

Of all the tonic remedies mentioned (CCXXXI.), the most celebrated, and perhaps the most certainly effectual, is the Peruvian bark, the tonic power of which we have endeavoured to demonstrate above

(CCXIV.), and have at the same time explained its use in continued fevers.

The same observation as made in CCXVI. is especially proper in the case of intermittents; and further with respect to these, the following observations or rules are offered here.

1. That the bark may be employed with safety at any period of intermittent fevers, providing that, at the same time, there be neither a phlogistic diathesis prevailing in the system, nor any considerable or fixed congestion present in the abdominal viscera.

2. The proper time for exhibiting the bark in intermittent fevers, is during the time of intermission; and where intermissions are to be expected, it is to be abstained from in the time of paroxysms.

3. In remittents, though no entire apyrexia occurs, the Bark may be given during the remissions; and it should be given, even though the remissions be inconsiderable, if, from the known nature of the epidemic, intermissions or considerable remissions are not to be soon expected, and that great danger is apprehended from repeated exacerbations.

4. In the case of genuine intermittents, while a due quantity of Bark is to be employed, the exhibition of it ought to be brought as near to the time of accession as the condition of the patient's stomach will allow.

5. In general, in all cases of intermittents, it is not sufficient that the recurrence of paroxysms be stopped for once by the use of the bark;

bark; a relapse is commonly to be expected, and should be prevented by the exhibition of the bark, repeated at proper intervals.

CCXXXIII.

Our second general indication for conducting the paroxysms of intermittent fevers, so as to obtain a final solution of the disease, may be answered,

1. By exhibiting emetics during the time of the cold stage, or at the beginning of the hot.

2. By opiates given during the time of the hot stage.

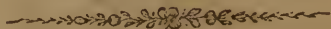
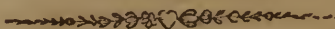
CCXXXIV.

The circumstances which may especially prevent the fulfilling of those two indications, and therefore give occasion to our third, are a phlogistic diathesis prevailing in the system, and congestions fixed in the abdominal viscera. The first must be removed by bloodletting and the antiphlogistic regimen; the second, by vomiting and purging.

Where these measures are not immediately effectual, I hold it safer to attempt the cure of the disease by the means pointed out in general in CCXXIX. rather than by those in article second of the same paragraph.

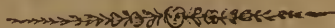


B O O K II.

OF INFLAMMATIONS, OR
PHLEGMASIÆ.

C H A P. I.

OF INFLAMMATION IN GENERAL.



S E C T. I.

Of the PHENOMENA of INFLAMMATION.

CCXXXV.

WHEN any part upon the surface of the body is affected with unusual redness, heat, pain, and tumour, we name the disease an Inflammation or Phlegmasia. These symptoms of inflammation are never considerable, without the whole system being, at the same time, affected with pyrexia.

CCXXXVI.

CCXXXVI.

As the external, so likewise the internal parts may be affected with inflammation; and we judge them to be so, when, together with pyrexia, there is a fixed pain in any internal part, attended with some interruption in the exercise of its functions.

CCXXXVII.

We judge of the presence of inflammation also from the state of the blood drawn out of the veins. When the blood, after cooling and concreting, shows a portion of the gluten separated from the rest of the mass, and lying on the surface of the crassamentum; as such separation happens in all cases of more evident phlegmasia; so, in ambiguous cases we, from this appearance, joined with other symptoms, infer the presence of inflammation. At the same time, it must be observed, that as several circumstances in bloodletting, may prevent this separation of gluten from taking place in blood otherwise disposed to it; so, from the absence of such appearance, we cannot always conclude against the presence of inflammation.

CCXXXVIII.

I cannot easily give any other general History of the phenomena of inflammation.

than what is contained in the three preceding paragraphs; and the variations which may take place in its circumstances, will occur to be more properly taken notice of under the several heads of the particular genera and species to be hereafter mentioned. I proceed, therefore, to inquire into the proximate cause of inflammation in general.

S E C T. II.

Of the PROXIMATE CAUSE *of* INFLAMMATION.

CCXXXIX.

The phenomena of inflammation (CCXXXV.) all concur in showing, that there is an increased impetus of the blood in the vessels of the part affected; and as, at the same time, the action of the heart is not always evidently increased, there is reason to presume, that the increased impetus of the blood in the particular part is owing especially to the increased action of the vessels of that part itself.

CCXL.

The cause of this increased action in the vessels of a particular part is, therefore, what
we

we are to inquire after, and to consider as the proximate cause of inflammation.

In many cases, we can manifestly perceive, that inflammation arises from the application of stimulant substances to the part. When the application of such stimulants, therefore, is evident, we seek for no other cause of inflammation ; but as, in many cases, such application is neither evident, nor, with any probability, to be supposed, we must, in such cases, seek for some other cause of the increased impetus of the blood in the vessels of the part.

CCXLI.

Many physicians have supposed, that an obstruction of the extreme vessels, any how produced, may prove a cause of inflammation ; and particularly, that this may arise from an obstruction formed by a matter stopping up these vessels. But many difficulties attend this doctrine.

1. The opinion seems chiefly to have arisen from the appearance of the blood described in CCXXXVII. when the separated gluten was considered as a preternatural and morbid matter ; but we now know very certainly, that this gluten is constantly a constituent part of the human blood ; and that it is only a peculiar separation of the parts of the blood that happens in consequence of inflammation
and

and some other circumstances, which gives occasion to the appearance that was falsely considered as a mark of a morbid lentor in the blood.

2. There are no experiments directly in proof of a preternatural lentor prevailing in the mass of blood; nor is there any evidence of certain parts of the blood occasionally acquiring a greater density and force of cohesion than ordinary; neither is there any proof of the denser, or more coherent parts, being present in the mass of blood in such greater proportion than usual, as to occasion a dangerous spissitude. The experiments of Dr. Browne Langrish on this subject afford no conclusion, having been made on certain parts of the blood separated from the rest, without attending to the circumstances of bloodletting, which very much alter the state of the separation and concretion of the blood drawn out of the veins.

3. The supposition of a preternatural lentor or viscosity of the blood, is not well founded; for it is probable, that nature has specially provided against a state of the fluids, so incompatible with the exercise of the most important functions of the animal economy. While motion continues to prevent any separation of parts, and heat continues to preserve the fluidity of the more viscid, there seems to be always so large a proportion of water present as to give a sufficient fluidity to the whole. I must own that this is not absolutely conclusive;

clusive ; but I still repeat it, as giving a probability to the general argument.

4. In the particular case of inflammation, there are several circumstances which render it probable that the blood is then more fluid than usual.

5. I presume that no such general lentor, as Boerhaave and his disciples have supposed, does ever take place ; because if it did, it must show more considerable effects than commonly appear.

6. Besides the supposition of an obstructing lentor, physicians have supposed, that an obstruction may be formed by an impermeable matter of another kind, and that such an obstruction may also be the cause of inflammation. This supposition is what is well known in the schools under the title of an *error loci* ; but it is an opinion that I cannot find to be at all probable ; for the motion of the blood in the extreme vessels is so weak and slow, as readily to admit a retrograde course of it ; and therefore, if a particle of blood should happen to enter a vessel whose branches will not allow of its passage, it will be moved backwards, till it meet with a vessel fit for transmitting it ; and the frequent ramifications and anastomoses of the extreme arteries are very favourable to this. I must own indeed, that this argument is not absolutely conclusive ; because I allow it to be pretty certain, that an *error loci* does actually upon occasion happen ; but, for the reasons

reasons I have given, it is probable that it seldom happens, and is therefore rarely the cause of inflammation; or if it be, that it is not merely by the obstruction that it produces; as, among other reasons, I conclude particularly from the following argument.

7. Though an obstruction should be supposed to take place, it will not be sufficient for producing the effects, and exhibiting the phenomena, that appear in inflammation. The theory that has been commonly employed on this occasion is by no means satisfying; and, in fact, it appears, from many observations and experiments, that considerable obstructions may be formed, and may subsist, without producing the symptoms of inflammation.

CCXLII.

Obstruction, therefore, from a matter stopping up the vessels, *Gaub. Pathol.* 249. i. is not to be considered as the primary cause of inflammation; but, at the same time, it is sufficiently probable, that some degree of obstruction does take place in every case of inflammation. The distention, pain, redness, and tumour attending inflammation, are to be explained only by supposing, that the extremities of the arteries do not readily transmit the unusual quantity of blood impelled into them by the increased action in the course of these vessels. Such an obstruction may be supposed to happen in every case of an increased

creased impetus of the blood ; but it is probable, that, in the case of inflammation, there is also a preternatural resistance to the free passage of the fluids.

CCXLIII.

From the doctrine of fever, we are led to believe, that an increased action of the heart and arteries is not supported for any length of time by any other means than a spasm affecting the extreme vessels ; and that the same spasm takes place in inflammation, seems likely, because that every considerable inflammation is introduced by a cold stage, and is accompanied with that and other circumstances of pyrexia. It seems also probable, that something analogous to this occurs even in the case of those inflammations which appear less considerable, and to be purely topical.

CCXLIV.

From all this, the nature of inflammation may in many cases be explained in the following manner. Some causes of inequality in the distribution of the blood may throw an unusual quantity of it upon particular vessels, to which it must necessarily prove a stimulus. But, further, it is probable, that, to relieve the congestion, the *vis medicatrix naturæ* increases still more the action of these vessels ; and which, as in all other febrile diseases, it effects
by

by the formation of a spasm on their extremities.

CCXLV.

A spasm of the extreme arteries, supporting an increased action in the course of them, may therefore be considered as the proximate cause of inflammation; at least, in all cases not arising from direct stimuli applied; and even in this case the stimuli may be supposed to produce a spasm of the extreme vessels.

CCXLVI.

That, in inflammation, there is the concurrence of a constriction of the extreme vessels, with an increased action in the other parts of them, seems probable, from the consideration of Rheumatism. This is a species of inflammation which is often manifestly produced, either by cold applied to over distended vessels, or by causes of an increased impetus, and over distention in vessels previously constricted. Hence the disease especially appears at seasons liable to frequent and considerable vicissitudes of heat and cold.

To this we may add, that the parts of the body most frequently affected with inflammation, are those exposed, both to over distention, from a change in the distribution of the fluids, and, at the same time, to the immediate action of cold. Hence, quinries, and pneumonic

monic inflammations, are more frequent than any others.

CCXLVII.

That a spasm of the extreme vessels takes place in inflammation, is to be further presumed from what is at the same time the state of the whole arterial system. In every considerable inflammation, though arising in one part only, an affection is communicated to the whole system, in consequence of which an inflammation is readily produced in other parts beside that first affected. This general affection is well known among physicians, under the name of the *DIATHESIS PHLOGISTICA*. It appears most commonly in persons of the most rigid fibres; is often manifestly induced by the tonic or astringent powers of cold; is increased by all tonic and stimulant powers applied to the body; is always attended with a hardness of the pulse; and is most effectually taken off by the relaxing power of blood-letting. From these circumstances, it seems probable, that the *diathesis phlogistica* consists in an increased tone, or contractility, and perhaps in an increased contraction of the muscular fibres of the whole arterial system. Such a state of the system seems often to arise, and subsist for some time, without the apparent inflammation of any particular part; but such a state of the system renders it likely, that a spasm may, at the same time, readily arise in
any

any of the extreme vessels, and a particular inflammation be there produced. It does, however, appear also, that the general diathesis frequently arises from inflammation begun in a particular part.

CCXLVIII.

I have thus endeavoured, in the case of inflammation, to explain the state of the whole system, as well as that of the part more particularly affected. The latter I have considered as when in its first formation; but after it has subsisted for some time, various changes take place in the part affected; and of these I must now take notice.

S E C T III.

Of the TERMINATIONS of INFLAMMATION.

CCXLIX.

If an inflammation be cured while the state and texture of the part remain entire the disease is said to be terminated by RESOLUTION.

This happens when the previous congestion and spasm have been in a moderate degree, and the increased impetus of the blood has been sufficient to overcome the spasm, to dilate the vessels, and to remove the congestion,
so

so that the part is restored to its ordinary and healthy state.

A resolution takes place also when the increased impetus of the fluids has produced an increased exhalation into the adjoining cellular texture, or an increased excretion in some neighbouring part, and has thereby relaxed the spasm, and relieved the congestion, in the vessels of the part more particularly affected.

Lastly, A resolution may take place, when the increased impetus of the blood in the whole system occasions an evacuation, which, though in a distant part, may prove sufficient to take off the phlogistic diathesis of the whole system, and thereby relieve the congestion and spasm of the particular part affected by inflammation. -

CCL.

The tumour which appears in inflammation may be imputed in part to the congestion of fluids in their proper vessels ; but is owing chiefly to an effusion of matter into the adjoining cellular texture ; and, accordingly, tumours seldom appear but in parts adjoining to a lax cellular texture. If, in this case, the matter effused be only a larger quantity of the ordinary exhaling fluid, this, when the free circulation in the vessels is restored, will be readily absorbed, and the state of the part will become the same as before. But, if the increased impetus of the blood in an inflamed part,

part, dilate the exhalant vessels to such a degree, that they pour out an entire serum, this will not be so readily reabsorbed ; and, from the experiments of Sir John Pringle, and especially from those of Mr. Gaber, *Miscell. Taurin.* Vol. II. we learn, that the serum, under stagnation, may suffer a particular change, by having the gluten present in it changed into a white, opaque, moderately viscid, mild liquor, which we name Pus. When this change takes place in the inflamed part, as it is at the same time attended with an abatement of the redness, heat, and pain, which before distinguished the inflammation, so the disease is said to be terminated by SUPPURATION ; and an inflamed part, containing a collection of pus, is called an ABSCESS.

CCLI.

In inflammation, the tendency of it to suppuration may be discovered, by the long continuance of the inflammation, without the symptoms of resolution ; by some remission of the pain of distention ; by the pain becoming of a throbbing kind, more distinctly connected with the pulsation of the arteries ; by the pulse of the arteries being fuller and softer ; and often by the patient's being frequently affected with cold shiverings. The period at which this takes place is not determined, but may be sometimes sooner, sometimes later.

When

When the tendency is determined, the time necessary to a complete suppuration is different in different cases.

When pus is completely formed, the pain in the part entirely ceases, and a weight is felt in it. If the collection be formed immediately under the skin, the tumour becomes pointed, the part becomes soft, and the fluctuation of the fluid within can commonly be perceived; while, at the same time, for the most part, the redness of the skin formerly prevailing is very much gone.

CCLII.

In abscesses, while the pus is formed of one part of the matter which had been effused, the other and thinner parts are reabsorbed, so that, in the abscess, when opened, a pus alone appears. This pus, however, is not the converted gluten alone; for the conversion of this being the effect of a particular fermentation, which may affect the solid substance of the part, and perhaps every solid of animal bodies; so it most readily, and particularly, affects the cellular texture, eroding much of it, which thereby becomes a part of the pus. It generally happens also, that some of the smaller red vessels are eroded, and thereby some red blood often appears mixed with the pus in abscesses. Upon the whole, the internal surface of an abscess is to be considered as an ulcerated part.

CCLIII.

CCLIII.

This account of suppuration explains, why an abscess, when formed, may either spread into the cellular texture of the neighbouring parts ; or, by eroding the incumbent teguments, be poured out upon the surface of the body, and produce an open ulcer.

CCLIV.

We have here given the idea of an abscess as a collection of matter following inflammation ; but the term has been applied to every collection of matter effused, and changed by stagnation in an inclosed cavity.

The matter of abscesses, and of the ulcers following them, is various, according to the nature of what is effused, and which may be,

1. A matter thinner than serum.
2. An entire and pure serum.
3. A quantity of red globules.
4. A matter furnished by particular glands seated in the part.
5. A mixture of matters from different sources, changed by peculiar fermentation.

It is the second only which affords a proper pus ; the effusion whereof, whether in suppurating parts or ulcers, seems to be the peculiar effect of an inflammatory state of the vessels ; and for this reason it is, that, when ulcers do not produce a proper pus, a circumstance always

ways absolutely necessary to their healing, we, in many cases, bring the ulcers to a state of proper suppuration, by the application of stimulants exciting inflammation, such as balsams, mercury, copper, &c.

CCLV.

When the matter effused into the cellular texture of an inflamed part, is tainted with a putrid ferment, this produces, in the effused matter, a state approaching more or less to that of putrefaction. When this is in a moderate degree, and affects only the fluids effused, with the substance of the cellular texture, the part is said to be affected with *GANGRENE*; but if the putrefaction affect also the vessels and muscles of the part, the disease is said to be a *SPHACELUS*.

CCLVI.

A gangrene, and its consequences, may arise from a putrid ferment diffused in the mass of blood, and poured out with the serum effused, which it operates upon more powerfully while the serum is stagnant, and retained in the heat of the body; but it may also arise from the peculiar nature of the matter effused being disposed to putrefaction; as particularly seems to be the case of the red globules of the blood effused in a large quantity. In a third manner also, a gangrene seems frequently

to arise from the violent excitement of the inflammation destroying the tone of the vessels ; whereby the whole fluids stagnate, and run into putrefaction, which taking place in any degree, destroys still further the tone of the vessels, and spreads the gangrene.

CCLVII.

In inflammation, the tendency to gangrene may be apprehended from an extreme violence of pain and heat in the inflamed part, and from a great degree of pyrexia attending the inflammation.

The actual coming on of gangrene may be perceived, by the colour of the inflamed part changing from a clear to a dark red ; by blisters arising upon the part ; by the part becoming soft, flaccid, and insensible ; and by the ceasing of all pain while these appearances take place.

As the gangrene proceeds, the colour of the part becomes livid, and, by degrees, quite black ; the heat of the part entirely ceases ; the softness and flaccidity of the part increase ; it loses its consistence, exhales a cadaverous smell, and may then be considered as affected with sphacelus.

CCLVIII.

Gangrene is thus a *third* manner in which inflammation terminates ; and the schools have commonly marked a *fourth* termination
of

of inflammation ; which is, by a scirrhus, or an indolent hardness of the part formerly affected with inflammation. This, however, is a rare occurrence, and does not seem to depend so much upon the nature of inflammation, as upon the circumstances of the part affected. It is in glandular parts chiefly that scirrhusity is observed ; and it is probably owing to the parts readily admitting a stagnation of the fluids. I have observed, that inflammation seldom induces scirrhus ; but that this more commonly arises from other causes ; and when inflammation supervenes, which it is sooner or later apt to do, it does not so commonly increase as change the scirrhusity into some kind of abscess. From these considerations, it does not seem necessary to take any further notice of scirrhus as a termination of inflammation.

CCLIX.

There are, however, some other terminations of inflammation not commonly taken notice of, but now to be mentioned.

One is, by the effusion of a portion of the entire mass of blood, either by means of rupture or of anastomosis, into the adjoining cellular texture. This happens especially in inflammations of the lungs, where the effused matter, by compressing the vessels, and stopping the circulation, occasions a fatal suffocation ; and this is perhaps the manner in which

pneumonic inflammation most commonly proves fatal.

CCLX.

Another kind of termination is, that of certain inflammations on the surface of the body, when there is poured out under the cuticle a fluid, which being too gross to pass through its pores, therefore separates it from the skin, and raises it up into the form of a vesicle containing the effused fluid; and by which effusion the previous inflammation is taken off.

CCLXI.

Beside these already mentioned, I believe there is still another manner in which inflammation terminates. When the internal parts are affected with inflammation, there seems to have been almost always upon their surface an exudation, which appears partly as a viscid concretion upon their surface, and partly as a thin serous fluid effused into the cavities in which the inflamed viscera are placed. Though we have become acquainted with these appearances only, as very constantly accompanying those inflammations which have proved fatal, it is however probable, that like circumstances may have attended those which were terminated by resolution, and may have contributed to that event. It is in favour of this supposition

supposition that there are instances of pneumonic inflammation terminating in a hydrothorax.

S E C T. IV.

Of the REMOTE CAUSES *of* INFLAMMATION.

CCLXII.

The remote causes of inflammation may be reduced to five heads.

1. The application of stimulant substances; among which are to be reckoned the action of fire, or burning.

2. External violence operating mechanically in wounding, bruising, compressing, or overstretching the parts.

3. Extraneous substances, lodged in any part of the body, irritating by their chemical acrimony or mechanical form, or compressing by their bulk or gravity.

4. Cold, in a certain degree, not sufficient immediately to produce gangrene.

5. An increased impetus of the blood determined to a particular part.

It will not be difficult to understand how these remote causes, singly, or in concurrence, produce the proximate cause of inflammation.

CCLXIII.

It does not appear, that, in different cases of inflammation, there is any difference in the state of the proximate cause, except in the degree of it; and though some difference of inflammation may arise from the difference of the remote causes, yet this is not necessary to be taken notice of here; because the different appearances which attend different inflammations may be referred, for the most part, to the difference of the part affected; as will appear when we shall consider the several genera and species marked in the Nosology. When I come to treat of these, I shall find a more proper occasion for taking notice of the different states of the proximate, or of the differences of the remote cause, than by treating of them in general here.

S E C T. V.

Of the CURE of INFLAMMATION.

CCLXIV.

The indications of cure in inflammation are different, according as it may still be capable of resolution, or may have taken a tendency to the
several

several other terminations abovementioned. As the tendency to these terminations is not always immediately evident, it is always proper, upon the first appearance of inflammation, to attempt the cure of it by resolution. For this purpose, the indications of cure are,

1. To remove the remote causes, when they are evident, and continue to operate.

2. To take off the phlogistic diathesis affecting either the whole system, or the particular part.

3. To take off the spasm of the particular part, by remedies applied either to the whole system, or to the part itself.

CCLXV.

The means of removing the remote causes will readily occur, from considering the particular nature and circumstances of the different kinds. Acrid matters must be removed, or their action must be prevented, by the application of correctors or demulcents. Compressing and overstretching powers must be taken away; and, from their several circumstances, the means of doing so will be obvious.

CCLXVI.

The means of taking off the phlogistic diathesis of the system are the same with those for moderating the violence of reaction in

fever, which are mentioned and treated of from CXXVII. to CXLIX. and therefore need not be repeated here. I only observe, that, in the use of those remedies, there is less occasion for any reserve than in many cases of fever ; and more particularly, that topical bleedings are here particularly indicated and proper.

CCLXVII.

The means of taking off the spasm of the particular part are nearly the same as those mentioned above, for taking off the spasm of the extreme vessels in the case of fever, and which are treated of from CL. to CC. Only it is observed here, that some of these are here especially indicated, and that some of them are to be directed more particularly to the part especially affected ; the management of which will be more properly considered when we shall treat of particular inflammations.

CCLXVIII.

When a tendency to suppuration (CCLI.) is distinctly perceived, as we suppose it to depend upon the effusion of a fluid which cannot be easily reabsorbed, so it becomes necessary that this fluid be converted into pus, as the only natural means of obtaining its
evacuation ;

evacuation; and as the effusion is, perhaps, seldom made without some rupture of the vessels, to the healing of which a pus is absolutely necessary; so, in the case of a tendency to suppuration, the indication of cure always is, to promote the production of a perfect pus as quickly as possible.

CCLXIX.

For this purpose, various remedies, supposed to possess a specific power, have been proposed; but I can perceive no such power in any of them; and, in my opinion, all that can be done is, to favour the suppuration by such applications as may support a proper heat in the part, as by some tenacity may confine the perspiration of the part, and as, by an emollient quality, may weaken the cohesion of the teguments, and favour their erosion.

CCLXX.

As, in the case of certain effusions, a suppuration is not only unavoidable, but desirable, it may be supposed, that most of the means of resolution formerly mentioned should be avoided; and accordingly our practice is commonly so directed. But as we observe, on the one hand, that a certain degree of increased impetus, or of the original circumstances of inflammation, is requisite to pro-

duce a proper suppuration; so it is then especially necessary to avoid those means of resolution that may diminish too much the force of the circulation. And as, on the other hand, the impetus of the blood, when violent, is found to prevent the proper suppuration; so, in such cases, although a tendency to suppuration may have begun, it may be proper to continue those means of resolution which moderate the force of the circulation.

With respect to the opening of abscesses, when completely formed, I refer to the writings on surgery.

CCLXXI.

When an inflammation has taken a tendency to gangrene, that event is to be prevented by every possible means; and these must be different, according to the nature of the several causes occasioning that tendency, as may be understood from what has been already said of them. After a gangrene has in some degree, taken place, it can be cured only by the separation of the dead from the living parts. This, in certain circumstances, can be performed by the knife, and always most properly, when it can be so done.

In other cases, it can be done by exciting a suppuratory inflammation on the verge of the living part, whereby its cohesion with the dead may be every where broken off, so that the latter may fall off by itself. While this
is

is doing, it is proper to prevent the further putrefaction of the part, and its spreading wider. For this purpose, various antiseptic applications have been proposed: But it appears to me, that, while the teguments are entire, these applications can hardly have any effect; and, therefore, that the fundamental procedure must be to scarify the part so as to reach the living substance, and, by the wounds made there, to excite the suppuration required. By the same incisions also, we give access to antiseptics, which may both prevent the progress of the putrefaction in the dead, and excite the inflammation necessary on the verge of the living part.

CCLXXII.

When the gangrene proceeds from a loss of tone; and when this, communicated to the neighbouring parts, prevents that inflammation which, as I have said, is necessary to the separation of the dead part from the living; it will be proper to obviate this loss of tone by tonic medicines given internally; and, for this purpose, the Peruvian bark has been found to be especially effectual. That this medicine operates by a tonic power, I have endeavoured to prove above (CCXIV.); and from what is said in CCXV. the limitations to be observed in employing it may also be learned. When the gangrene arises from the violence of inflammation, the bark may not only fail

of proving a remedy, but may do harm ; and its power as a tonic, is especially suited to those cases of gangrene which proceed from an original loss of tone, as in the case of palsy and œdema ; or to those cases of inflammation where a loss of tone takes place, while the original inflammatory symptoms are removed.

CCLXXIII.

The other terminations of inflammation either do not admit of any treatment except that of preventing them by the means of resolution ; or they belong to a treatise of surgery, rather than to this place.

Having thus, therefore, delivered the general doctrine, I proceed now to consider the particular genera and species of inflammation.

It has been hinted above (CCLXIII.), that the difference of inflammation arises chiefly from the difference of the part affected : I have therefore arranged them, as they are CUTANEOUS, VISCERAL, OR ARTICULAR ; and in this order they are now to be considered.

C H A P. II.

OF INFLAMMATION, MORE STRICTLY
CUTANEOUS.

CCLXXIV.

CUTANEOUS inflammations are of two kinds, commonly distinguished by the names of PHLEGMON and ERYSIPELAS.

Of the latter there are two cases, which ought to be distinguished by different appellations. When the disease is an affection of the skin alone, and very little of the whole system, or when the affection of the system is only symptomatical of the external inflammation, I shall give the disease the name of ERYTHEMA; but when the external inflammation is an exanthema, and symptomatical of an affection of the whole system, I shall then name the disease ERYSIPELAS.

CCLXXV.

It is the erythema only that I am to consider here.

For the distinction between Erythema and Phlegmon, I have formerly referred to the characters given of them in our Nosology. See
Synopsf.

Synops. Nosolog. Meth. Vol. II. p. 5. gen. vii. spec. 1. and 2. But I think it proper now to deliver the characters of them more fully and exactly here, as follows.

A Phlegmon is an inflammatory affection of the skin, with a swelling, rising generally to a more considerable eminence in the middle of it; of a bright red colour; both the swelling and colour being pretty exactly circumscribed; the whole being attended with a pain of distention, often of a stounding or throbbing kind, and frequently ending in suppuration.

An Erythema, Rose, or St. Anthony's Fire, is an inflammatory affection of the skin, with hardly any evident swelling; of a mixed and not very bright red colour, readily disappearing upon pressure, but quickly returning again; the redness of no regular circumscription, but spreading unequally, and continuing almost constantly to spread upon the neighbouring part; with a pain like to that from burning; producing blisters, sometimes of a small, sometimes of a larger size; and always ending in a desquamation of the scarf skin, sometimes in gangrene.

This subject I am not to prosecute here, as properly belonging to surgery, the business of which I am seldom to enter upon in this work; and shall therefore observe only as necessary here, that the difference of these appearances seems to depend on the different seat of the inflammation. In the phlegmon, the inflammation

mation seems to affect especially the vessels on the internal surface of the skin communicating with the lax subjacent cellular texture; whence a more copious effusion, and that of serum, convertible into pus, takes place. In the erythema, the inflammation seems to have its seat in the vessels on the external surface of the skin, communicating with the rete mucosum, which does not admit of any effusion, but what separates the cuticle, and gives occasion to the formation of a blister, while the smaller size of the vessels admits only of the effusion of a thin fluid, very seldom convertible into pus.

Besides these differences in the circumstances of these two kinds of inflammation, it is probable that they also differ with respect to their causes. Erythema is the effect of all kinds of acrids externally applied to the skin; and, when arising from an internal cause, it is from an acrimony poured out on the surface of the skin under the cuticle. In the phlegmon, an acrimony is not commonly evident.

CCLXXVI.

These differences in the seat and causes of the phlegmon and erythema being admitted, it will be evident, that when an erythema affects any internal part, it can take place in those only whose surfaces are covered with an epithelion, or membrane analogous to the cuticle.

CCLXXVII.

CCLXXVII.

The same distinction between the seat and causes of the two diseases will, as I judge, readily explain what has been delivered by practical writers, with respect to the cure of these different cutaneous inflammations. But I shall not, however, prosecute this here, for the reason given above (CCLXXV.) ; and, for the same reason, shall not say any thing of the variety of external inflammation, that might otherwise be considered here.

C H A P. III.

OF OPHTHALMIA, OR INFLAMMATION OF THE EYE.

CCLXXVIII.

THE inflammation of the eye may be considered as of two kinds ; according as it has its seat in the membranes of the ball of the eye, when I would name it *OPHTHALMIA MEMBRANARUM* ; or as it has its seat in the sebaceous glands placed in the tarsus, or edges of the eyelids, in which case it may be termed *OPHTHALMIA TARSI*.

These two kinds are very frequently combined together, as the one may readily excite the other ; but they are still to be distinguished according as the one or the other may happen to be the primary affection, and properly as they often arise from different causes.

CCLXXIX

The inflammation of the membranes of the eye affects especially, and most frequently, the adnata, appearing in a turgescence of its vessels ; so that the red vessels which are naturally there, become not only increased in size, but

but there appear many more than did in a natural state. This turgescence of the vessels is attended with pain; especially upon the motion of the ball of the eye; and this, like every other irritation applied to the surface of the eye, produces an effusion of tears from the lachrymal gland.

This inflammation commonly, and chiefly, affects the adnata spread on the anterior part of the bulb of the eye; but usually spreads also along the continuation of that membrane on the inside of the palpebræ; and, as that is extended on the tarsus palpebrarum, the excretories of the sebaceous glands opening there are also frequently affected. When the affection of the adnata is considerable, it is frequently communicated to the subjacent membranes of the eye, and even to the retina itself, which thereby acquires so great a sensibility, that the slightest impression of light becomes painful.

CCLXXX.

The inflammation of the membranes of the eye is in different degrees, according as the adnata is more or less affected, or according as the inflammation is either of the adnata alone, or of the subjacent membranes also; and, upon these differences, different species have been established, and different appellations given to them. But I shall not, however, prosecute the consideration of these, being
of

of opinion, that all the cases of the Ophthalmia membranarum differ only in degree, and are to be cured by remedies of the same kind, more or less employed.

The remote causes of Ophthalmia are many and various ; as,

1. External violence, by blows, contusions, and wounds, applied to the eyes ; and even very slight impulses applied, whilst the eyelids are open, to the ball of the eye itself, are sometimes sufficient for the purpose.

2. Extraneous bodies introduced under the eyelids, either of an acrid quality, as smoke and other acrid vapours, or of a bulk sufficient to impede the free motion of the eyelids upon the surface of the eyeball.

3. The application of strong light, or even of a moderate light long continued.

4. The application of much heat, and particularly of that with moisture.

5. Much exercise of the eyes in viewing minute objects.

6. Frequent intoxication.

7. Irritation from other and various diseases of the eyes.

8. An acrimony prevailing in the mass of blood, and deposited in the sebaceous glands on the edges of the eyelids.

9. A change in the distribution of the blood, whereby either a more than usual quantity of blood, and with more than usual force, is impelled into the vessels of the head,

or

or whereby the free return of the venous blood from the vessels of the head is interrupted.

10. A certain consent of the eyes with the other parts of the system, whereby, from a certain state of these parts, either a simultaneous, or an altering affection of the eyes, is produced.

CCLXXXI.

The proximate cause of Ophthalmia is not different from that of inflammation in general ; and the different circumstances of Ophthalmia may be explained by the difference of its remote causes, and by the different parts of the eye which it happens to affect. This may be understood from what has been already said ; and I shall now therefore proceed to consider the CURE.

CCLXXXII.

In the cure of Ophthalmia, the first attention will be always due to the removing of the remote causes, and the various means necessary for this purpose will be directed by the consideration of these causes enumerated above.

The Ophthalmia membranarum requires the remedies proper for inflammation in general ; and, when the deeper seated membranes are affected, and especially when a pyrexia is present, large general bleedings may be necessary. But this is seldom the case ; as the
Ophthalmia,

Ophthalmia, for the most part, is an affection purely local, accompanied with little or no pyrexia. General bleedings, therefore, from the arm or foot, have little effect upon it ; and the cure is chiefly to be obtained by topical bleedings, that is, blood drawn from vessels near the inflamed part ; and opening the jugular vein or the temporal artery, may be considered as in some measure of this kind. It is commonly sufficient to apply a number of leeches round the eye ; and it is perhaps better still to draw blood from the temples, by cupping and scarifying. In many cases, a very effectual remedy is, that of scarifying the internal surface of the inferiour eyelid ; and more so still, is cutting the turgid vessels upon the adnata itself.

CCLXXXIII.

Besides bloodletting, purging, as a remedy suited to inflammation in general, has been considered as peculiarly adapted to inflammations in any of the parts of the head, and therefore to Ophthalmia ; and it is sometimes useful ; but, for the reasons given before with respect to general bleeding, purging in the case of Ophthalmia does not prove useful in any degree in proportion to the evacuation excited.

CCLXXXIV.

CCLXXXIV.

For relaxing the spasm in the part, and taking off the determination of the fluids to it, blistering near the part has commonly been found useful.

CCLXXXV.

Electrical sparks taken from the eye will often suddenly disperse the inflammation of the adnata; but the effect is seldom permanent, and even a frequent repetition seldom gives an entire cure.

CCLXXXVI.

Ophthalmia, as an external inflammation, admits of topical applications. All those, however, that increase the heat and relax the vessels of the part, prove commonly hurtful; and the admission of cool air to the eye, the proper application of cold water immediately to the ball of the eye, and the application of various cooling and astringent medicines, which at the same time do not produce much irritation, prove generally useful; even spirituous liquors, employed in moderate quantity, have often been of service.

CCLXXXVII.

CCLXXXVII.

In the cure of Ophthalmia, much care is requisite to avoid all irritation, particularly that of light ; and the only safe and certain means of doing this, is by confining the patient to a very dark chamber.

CCLXXXVIII.

These are the remedies of the Ophthalmia membranarum ; and in the Ophthalmia tarfi, so far as it is produced by the Ophthalmia membranarum, the same remedies may be necessary. As, however, the Ophthalmia tarfi may often depend upon an acrimony deposited in the sebaceous glands of the part, so it may require various internal remedies according to the nature of the acrimony in fault ; for which I must refer to the consideration of scrophula, syphilis, or other diseases with which this Ophthalmia may be connected ; and when the nature of the acrimony is not ascertained, certain remedies, more generally adapted to the evacuation of acrimony, such, for instance, as mercury, may be employed.

CCLXXXIX.

In the Ophthalmia tarfi, it almost constantly happens, that some ulcerations are formed on the tarsus. These require the application
of

of mercury or copper, either of which may by itself sometimes entirely cure the affection; and these may even be useful when the disease depends upon a fault of the whole system.

CCXC.

Both in the Ophthalmia membranarum, and in the Ophthalmia tarfi, it is necessary to obviate that gluing or sticking together of the eyelids which commonly happens in sleep; and this may be done by insinuating a little of any mild unctuous medicine of some tenacity between the eyelids before the patient shall go to sleep.

C H A P. IV.

OF PHRENSY, OR PHRENITIS.

CCXCI.

THIS disease is an inflammation of the parts contained in the cavity of the cranium; and may affect either the membranes of the brain, or the substance of the brain itself. Nosologists have apprehended, that these two cases might be distinguished by different symptoms, and therefore by different appellations; but this does not seem to be confirmed by observation and dissection; and therefore I shall treat of both cases under the title of Phrensy, or Phrenitis.

CCXCII.

An idiopathic phrensy is a rare occurrence, a sympathetic more frequent; and the ascertaining either the one or the other is, upon many occasions, difficult. Many of the symptoms by which the disease is most commonly judged to be present, have appeared, when, from certain considerations, it was presumed, and even from dissection it appeared, that

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there had been no internal inflammation; and, on the other hand, dissections have shown, that the brain had been inflamed, when few of the peculiar symptoms of phrensy had before appeared.

CCXCIII.

The symptoms by which this disease may be most certainly known are, a vehement pyrexia, a violent deep seated headach, a redness and turgescence of the face and eyes, an impatience of light or noise, a constant watching, and a delirium impetuous and furious. Some nosologists have thought these symptoms peculiar to an inflammation of the membranes, and that the inflammation of the substance of the brain was to be distinguished by some degree of coma attending it. It was for this reason that in the Nosology I added the Typhomania to the character of Phrenitis; but, upon farther reflection, I find no proper foundation for this; and, if we pass from the characters above delivered, there will be no means of fixing the variety that occurs.

I am here, as in other analogous cases, of opinion, that the symptoms above mentioned of an acute inflammation, always mark inflammations of membranous parts; and that an inflammation of the paronchyma or substance of viscera, exhibits, at least commonly, a more chronic affection.

CCXCIV.

CCXCIV.

The remote causes of phrensy, are all those which directly stimulate the membranes, or substance of the brain ; and particularly all those which increase the impetus of the blood in the vessels of the brain. Among these the exposure of the naked head to the direct rays of a very warm sun, is a frequent cause. The passions of the mind, and certain poisons, are amongst the remote causes of phrensy ; but in what manner they operate, is not well understood.

CCXCV.

The cure of phrensy is the same with that of inflammation in general ; but in phrensy the most powerful remedies are to be immediately employed. Large and repeated blood-letting is especially necessary ; and the blood should be drawn from vessels as near as possible to the part affected. The opening of the temporal artery has been recommended, and with some reason ; but the practice is attended with inconvenience ; and I apprehend, that opening the jugular veins may prove more effectual ; but, at the same time, it will be generally proper to draw blood from the temples by cupping and scarifying.

CCXCVI.

It is probable, that purging, as it may operate by revulsion, may be of more use in this than in some other inflammatory affections.

For the same purpose of revulsion, warm pediluvia are a remedy ; but, at the same time, somewhat ambiguous. The taking off the force of the blood in the vessels of the head by an erect posture, is generally useful.

CCXCVII.

Shaving of the head is always proper and necessary for the admission of other remedies. Blistering is commonly useful in this disease, but chiefly when applied near to the part affected.

CCXCVIII.

Every part of the antiphlogistic regimen is here necessary, and particularly the admission of cold air. Even cold substances, applied close to the head, have been found safe and highly useful ; and the application of such refrigerants as vinegar, is certainly proper.

CCXCIX.

It appears to me certain, that opiates are hurtful in every inflammatory state of the brain ;

brain ; and it is to be observed, that, from the ambiguity mentioned in CCXCII. the accounts of practitioners, with regard to the *juvantia* and *lædientia* in this disease, are of very uncertain application.

C H A P. V.

OF THE QUINSY, OR CYNANCHE.

CCC.

THIS name is applied to every inflammation of the internal fauces; but these inflammations are different, according to the part of the fauces which may be affected, and according to the nature of the inflammation. In the Nosology, therefore, after giving the character of the Cynanche as a genus, I have distinguished five different species, which must here likewise be separately considered.

S E C T. I.

Of the CYNANCHE TONSILLARIS.

CCCI.

THIS is an inflammation of the mucous membrane of the fauces, affecting especially that congeries of mucous follicles which forms the tonsils, and spreading from thence along the velum and uvula, so as frequently to affect every part of the mucous membrane.

CCCII.

CCCII.

The disease appears by some tumour, sometimes considerable, and by a redness of the parts ; is attended with a painful and difficult deglutition ; with a pain sometime shooting into the ear ; with a troublesome clamminess of the mouth and throat ; with a frequent, but difficult, excretion of mucous ; and the whole is accompanied with a pyrexia.

CCCIII.

This species of quinsy is never contagious. It terminates frequently by resolution, sometimes by suppuration, but hardly ever by gangrene ; although in this disease some sloughy spots, commonly supposed to be forerunners of gangrene, sometimes appear upon the fauces.

CCCIV.

This disease is commonly occasioned by cold externally applied, particularly about the neck. It affects especially the young and sanguine, and a disposition to it is often acquired by habit ; so that from every considerable application of cold to any part of the body, this disease is readily induced. It

occurs especially in spring and autumn, when vicissitudes of heat and cold frequently take place. The inflammation and tumour are commonly at first most considerable in one tonsil ; and afterwards, abating in that, increase in the other.

CCC.V.

In the cure of this inflammation, some bleeding may be proper ; but large general bleedings will seldom be necessary. The opening of the ranular veins seems to be an insignificant remedy ; and leeches set upon the external fauces are of more efficacy.

CCC.VI.

At the beginning of the disease, full vomiting has been frequently found to be of great service.

CCC.VII.

This inflammation may be often relieved by moderate astringents, and particularly by acids applied to the inflamed parts. In many cases, however, nothing has been found to give more relief than the vapour of warm water received into the fauces by a proper apparatus.

CCC.VIII.

CCCVIII.

The other remedies of this disease are rubefacient or blistering medicines, applied externally to the neck ; and, with these, the employment of antiphlogistic purgatives, as well as every part of the antiphlogistic regimen, excepting the application of cold.

CCCIX.

This disease, as we have said, often terminates by resolution, frequently accompanied with sweating ; which is therefore to be prudently favoured and encouraged.

CCCX.

When this disease shall have taken a tendency to suppuration, nothing will be more useful, than the frequent taking into the fauces the steams of warm water. When the abscess is attended with much swelling, if it break not spontaneously, it should be opened by a lancet ; and this does not require much caution, as even the inflammatory state may be relieved by some scarification of the tonsils. I have never had occasion to see any case requiring bronchotomy.

S E C T. II.

Of the CYNANCHE MALIGNA.

CCCXI.

THIS is a contagious disease, seldom sporadic, and commonly epidemic. It attacks persons of all ages, but more commonly those in a young and infant state. It attacks persons of every constitution when exposed to the contagion, but most readily the weak and infirm.

CCCXII.

This disease is usually attended with a considerable pyrexia; and the symptoms of the accession of this, such as frequent cold shiverings, sickness, anxiety, and vomiting, are often the first appearances of the disease. About the same time, a stiffness is felt in the neck, with some uneasiness in the internal fauces, and some hoarseness of the voice. The internal fauces, when viewed, appear of a deep red colour, with some tumour; but this last is seldom considerable, and deglutition is seldom difficult or painful. Very soon, a number of white or ash coloured spots appear upon the
inflamed

inflamed parts. These spots spread and unite, covering almost the whole fauces with thick sloughs ; which falling off, discover ulcerations. While these symptoms proceed in the fauces, they are generally attended with a coryza, which pours out a thin acrid and fetid matter, excoriating the nostrils and lips. There is often also, especially in infants, a frequent purging ; and a thin acrid matter flows from the anus, excoriating this and the neighbouring parts.

CCCXIII.

With these symptoms, the pyrexia proceeds with a small, frequent, and irregular pulse ; and there occurs a manifest exacerbation every evening, and some remission in the mornings. A great debility appears in the animal functions ; and the sensorium is affected with delirium, frequently with coma.

CCCXIV.

On the second day, or sometimes later, efflorescences appear upon the skin, which are sometimes in small points hardly eminent ; but, for the most part, in patches of a red colour, spreading and uniting so as to cover the whole skin. They appear first about the face and neck, and in the course of some days spread by degrees to the lower extremities. The scarlet redness is often considerable on

the hands and extremities of the fingers, which feel stiff and swelled. This eruption is often irregular, as to the time of its appearance, as to its steadiness, and as to the time of its duration. It usually continues four days, and goes off by some desquamation of the cuticle ; but neither on its first appearance, nor on its desquamation, does it always produce a remission of the pyrexia, or of the other symptoms.

CCCXV.

The progress of the disease depends on the state of the fauces and of the pyrexia. When the ulcers on the fauces, by their livid and black colour, by the fetor of the breath, and by many marks of acrimony in the fluids, show a tendency to gangrene, this takes place to a considerable degree ; and, the symptoms of a putrid fever constantly increasing, the patient dies, often on the third day, sometimes later, but for the most part before the seventh. The acrimony poured out from the diseased fauces must necessarily, in part, pass into the pharynx, and there spread the infection into the œsophagus, and sometimes through the whole of the alimentary canal, propagating the putrefaction, and often exhausting the patient by a frequent diarrhœa.

The acrid matter poured out in the fauces being again absorbed, frequently occasions large swellings of the lymphatic glands about
the

the neck, and sometimes to such a degree as to occasion suffocation.

It is seldom that the organs of respiration escape entirely unhurt, and very often the inflammatory affection is communicated to them. From dissections it appears, that, in the *Cynanche maligna*, the larynx and trachea are often affected in the same manner as in the *Cynanche trachealis*; and it is probable, that, in consequence of that affection, the *Cynanche maligna* often proves fatal by such a sudden suffocation as happens in the proper *Cynanche trachealis*; but there is reason to suspect that upon this subject dissectors have not always distinguished properly between the two diseases.

CCCXVI.

These are the several fatal terminations of the *Cynanche maligna*; but they do not always take place. Sometimes the ulcers of the fauces are of a milder nature; and the fever is more moderate, as well as of a less putrid kind. And when, upon the appearance of the efflorescence on the skin, the fever suffers a remission; when the efflorescence continues for three or four days, till it has spread over the whole body, and then ends by a desquamation, giving a further remission of the fever; this often entirely terminates, by gentle sweats, on or before the seventh day; and the rest of the disease terminates in a few days more,

more, by an excretion of sloughs from the fauces, while sleep, appetite, and the other marks of health, return.

From what is said in this and the preceding paragraph, the prognostics in this disease may be readily learned.

CCCXVII.

In the cure of this disease, its septic tendency is chiefly to be kept in view. The debility, with which it is attended, renders all evacuations by bleeding and purging improper, except in a few instances where the debility is less, and the inflammatory symptoms more considerable. The fauces are to be preserved from the effects of the acrid matter poured out upon them, and are therefore to be frequently washed out by antiseptic gargles or injections; and the septic tendency of the whole system should be guarded against and corrected by internal antiseptics, especially by the Peruvian bark given in substance, from the beginning, and continued through the course of the disease. Emetics, both by vomiting and nauseating, prove useful, especially when employed early in the disease. When any considerable tumour occurs, blisters applied externally will be of service, and, in any case, may be fit to moderate the internal inflammation.

S E C T. III.

Of the CYNANCHE TRACHEALIS.

CCCXVIII.

THIS name has been given to an inflammation of the glottis, larynx, or upper part of the trachea, whether it affect the membranes of these parts, or the muscles adjoining. It may arise first in these parts, and continue to subsist in them alone ; or it may come to affect these parts from the Cynanche tonsillaris or maligna spreading into them.

CCCXIX.

In either way it has been a rare occurrence, and few instances of it have been marked and recorded by physicians. It is to be known by a peculiar ringing sound of the voice, by difficult respiration, with a sense of straitening about the larynx, and by a pyrexia attending it.

CCCXX.

From the nature of these symptoms, and from the dissection of the bodies of persons who had died of this disease, there is no doubt
of

of its being of an inflammatory nature. It does not, however, always run the course of inflammatory affections ; but frequently produces such an obstruction of the passage of the air, as suffocates, and thereby proves suddenly fatal.

CCCXXI.

If we judge rightly of the nature of this disease, it will be obvious, that the cure of it requires the most powerful remedies of inflammation, to be employed upon the very first appearance of the symptoms. When a suffocation is threatened, whether any remedies can be employed to prevent it, we have not had experience to determine.

CCCXXII.

The accounts which books have hitherto given us of inflammations of the larynx, and the parts connected with it, amount to what we have now said ; and the instances recorded have almost all of them happened in adult persons ; but there is a peculiar affection of this kind happening especially to infants, which till lately has been little taken notice of. Dr. Home is the first who has given any distinct account of it ; but, since he wrote, several other authors have taken notice of it, (see MICHAELIS *De angina polyposa five membranacia, Argentorati* 1778) ; and have given
different

different opinions with regard to it. Concerning this diversity of opinions I shall not at present inquire ; but shall deliver the history and cure of this disease, in so far as these have arisen from my own observation, from that of Dr. Home, and of other skilful persons in this neighbourhood.

CCCXXIII.

This disease seldom attacks infants till after they have been weaned. After this period, the younger they are, the more they are liable to it. The frequency of it becomes less as children become more advanced ; and there are no instances of children above twelve years of age being affected with it. It attacks children of the midland countries, as well as those who live near the sea. It does not appear to be contagious, and its attacks are frequently repeated in the same child. It is often manifestly the effect of cold applied to the body ; and therefore appears most frequently in the winter and spring seasons. It very commonly comes on with the ordinary symptoms of a catarrh ; but sometimes the peculiar symptoms of the disease show themselves at the very first.

CCCXXIV.

These peculiar symptoms are the following : A hoarseness, with some shrillness and ringing

ringing sound, both in speaking and coughing, as if the noise came from a brazen tube. At the same time there is a sense of pain about the larynx, some difficulty of respiration, with a whizzing sound in inspiration, as if the passage of the air were straitened. The cough which attends it, is commonly dry; and, if any thing be spit up, it is a matter of a purulent appearance; and sometimes films resembling portions of a membrane. Together with these symptoms, there is a frequency of pulse, a restlessness, and an uneasy sense of heat. When the internal fauces are viewed, they are sometimes without any appearance of inflammation; but frequently a redness, and even swelling, appear; and sometimes in the fauces, there is an appearance of matter like to that rejected by coughing. With the symptoms now described, and particularly with great difficulty of breathing, and a sense of strangling in the fauces, the patient is sometimes suddenly taken off.

CCCXXV.

There have been many dissections made of infants who had died of this disease; and almost constantly there has appeared a preternatural membrane lining the whole internal surface of the upper part of the trachea, and extending in the same manner downwards into some of its ramifications. This preternatural membrane may be easily separated, and
sometimes

sometimes has been found separated in part, from the subjacent proper membrane of the trachea. This last is commonly found entire, that is, without any appearance of erosion or ulceration ; but it frequently shows the vestiges of inflammation, and is covered by a matter resembling pus, like to that rejected by coughing ; and very often a matter of the same kind is found in the bronchiæ, sometimes in considerable quantity.

CCCXXVI.

From the remote causes of this disease ; from the catarrhal symptoms commonly attending it ; from the pyrexia constantly present with it ; from the same kind of preternatural membrane being found in the trachea when the cynanche maligna is communicated to it ; and from the vestiges of inflammation on the trachea discovered upon dissection ; we must conclude, that the disease consists in an inflammatory affection of the mucous membrane of the larynx and trachea, producing an exudation analogous to that found on the surface of inflamed viscera, and appearing partly in a membranous crust, and partly in a fluid resembling pus.

CCCXXVII.

Though this disease manifestly consists in an inflammatory affection, it does not commonly

monly end either in suppuration or gangrene. The peculiar and troublesome circumstance of the disease seems to consist in a spasm of the muscles of the glottis, which, by inducing a suffocation, prevents the common consequences of inflammation.

CCCXXVIII.

When this disease terminates in health, it is by a resolution of the inflammation, by a ceasing of the spasm of the glottis, by an expectoration of the matter exuding from the trachea, and of the crusts formed there ; and frequently it ends without any expectoration, or at least with such only as attends an ordinary catarrh.

CCCXXIX.

When the disease ends fatally, it is by a suffocation ; seemingly, as we have said, depending upon a spasm affecting the glottis ; but sometimes, probably, depending upon a quantity of matter filling the bronchiæ.

CCCXXX.

As we suppose the disease to be an inflammatory affection, so we attempt the cure of it by the usual remedies of inflammation, and which for the most part I have found effectual. Bleeding, both general and topical, has
often.

often given immediate relief; and, by being repeated, has entirely cured the disease. Blistering also, near to the part affected, has been found useful. Upon the first attack of the disease, vomiting, immediately after bleeding, seems to be of considerable use, and sometimes suddenly removes the disease. In every stage of the disease, the antiphlogistic regimen is necessary, and particularly the frequent use of laxative glysters. Though we suppose that a spasm affecting the glottis is often fatal in this disease, I have not found antispasmodic medicines to be of any use.

S E C T. IV.

Of the CYNANCHE PHARYNGÆA.

CCCXXI.

IN the Cynanche tonsillaris, the inflammation of the mucous membrane often spreads upon the pharynx, and into the beginning of the œsophagus, and thereby renders deglutition more difficult and uneasy; but such a case does not require to be distinguished as a different species from the common Cynanche tonsillaris; and only requires that bloodletting, and other remedies, should be employed with greater diligence than in ordinary cases.

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We have never seen any case in which the inflammation began in the pharynx, or in which this part alone was inflamed ; but practical writers have taken notice of such a case ; and to them, therefore, I must refer, both for the appearances which distinguish it, and for the method of cure.

S E C T. V.

Of the CYNANCHE PAROTIDEA.

CCCXXXII.

THIS is a disease known to the vulgar, and among them has got a peculiar appellation in every country of Europe ; but has been little taken notice of by medical writers. It is often epidemic, and manifestly contagious. It comes on with the usual symptoms of pyrexia, which is soon after attended with a considerable tumour of the external fauces and neck. This tumour appears first as a glandular moveable tumour at the corner of the lower jaw ; but the swelling soon becomes uniformly diffused over a great part of the neck, sometimes on one side only, but more commonly on both. The swelling continues to increase till the fourth day ; but from that period it declines, and in a few days more passes off entirely.

As

As the swelling of the fauces recedes, some tumour affects the testicles in the male sex, or the breasts in the female. These tumours are sometimes large, hard, and somewhat painful ; but, in this climate, are seldom either very painful or of long continuance. The pyrexia attending this disease is commonly slight, and recedes with the swelling of the fauces ; but sometimes, when the swelling of the testicles does not succeed to that of the fauces, or when the one or the other has been suddenly repressed, the pyrexia becomes more considerable, is often attended with delirium, and has sometimes proved fatal.

CCCXXXIII.

As this disease commonly runs its course without either dangerous or troublesome symptoms, so it hardly requires any remedies. An antiphlogistic regimen, and avoiding cold, are all that will be commonly necessary. But when upon the receding of the swellings of the testicles in males, or of the breasts in females, the pyrexia comes to be considerable, and threatens an affection of the brain, it will be proper, by warm fomentations, to bring back the swelling ; and, by vomiting, bleeding, or blistering, to obviate the consequences of its absence.

C H A P. VI.

OF PNEUMONIA, OR PNEUMONIC
INFLAMMATION.

CCCXXXIV.

UNDER this title I mean to comprehend the whole of the inflammations affecting either the viscera of the thorax or the membrane lining the interior surface of that cavity ; for neither do our diagnostics serve to ascertain exactly the seat of the disease ; nor does the difference in the seat of the disease exhibit any considerable variation in the state of the symptoms, nor lead to any difference in the method of cure.

CCCXXXV.

Pneumonic inflammation, however various in its seat, seems to me to be always known and distinguished by the following symptoms ; pyrexia, difficult breathing, cough, and pain in some part of the thorax. But these symptoms are, on different occasions, variously modified.

CCCXXXVI.

CCCXXXVI.

The disease almost always comes on with a cold stage, and is accompanied with the other symptoms of pyrexia; though, in a few instances, the pulse may not be more frequent, nor the heat of the body increased beyond what is natural. Sometimes the pyrexia is from the beginning accompanied with the other symptoms; but frequently it is formed for some hours before the other symptoms become considerable, and particularly before the pain be felt. For the most part, the pulse is frequent, full, strong, hard, and quick; but, in a few instances, especially in the advanced state of the disease, the pulse is weak and soft, and at the same time irregular.

CCCXXXVII.

The difficulty of breathing is always present, and most considerable in inspiration; both because the lungs do not easily admit of a full dilatation, and because the dilatation aggravates the pain attending the disease. The difficulty of breathing is also greater when the patient is in one posture of his body rather than another. It is generally greater when he lies upon the side affected; but sometimes the contrary happens. Very often the patient cannot lie easy upon either side, finding ease only when lying on his back; and sometimes

he cannot breathe easily, except when in somewhat of an erect posture.

CCCXXXVIII.

A cough always attends this disease ; but, in different cases, is more or less urgent and painful. It is sometimes dry, that is, without any expectoration, especially in the beginning of the disease ; but more commonly it is, even from the first, moist, and the matter spit up various both in consistence and colour ; and frequently it is streaked with blood.

CCCXXXIX.

The pain attending this disease, is, in different cases, felt in different parts of the thorax, but most frequently in one side. It has been said to affect the right side more frequently than the left ; but this is not certain ; while, on the other hand, it is certain, that the left side has been very often affected. The pain is felt sometimes as if it were under the sternum ; sometimes in the back between the shoulders ; and, when in the sides, its place has been higher or lower, more forward or backward ; but the place of all others most frequently affected, is about the sixth or seventh rib, near the middle of its length, or a little more forward. The pain is often severe and pungent ; but sometimes more dull and obtuse, with a sense of weight rather than of pain.

pain. It is most especially severe and pungent when occupying the place last mentioned. For the most part it continues fixed in one place ; but sometimes shoots from the side to the scapula on one hand, or to the sternum and clavicle on the other.

CCCXL.

The varying state of symptoms now mentioned does not always ascertain precisely the seat of the disease. To me it seems probable, that the disease is always seated, or at least begins, in some part of the pleura ; taking that membrane in its greatest extent, as now commonly understood ; that is, as covering not only the internal surface of the cavity of the thorax, but also as forming the mediastinum, and as extended over the pericardium and over the whole surface of the lungs.

CCCXLI.

There is, therefore, little foundation for distinguishing this disease by different appellations taken from the part which may be supposed to be chiefly affected. The term Pleurisy, might with propriety be applied to every case of the disease ; and has been very improperly limited to that inflammation which begins in, and chiefly affects, the *pleura costalis*. I have no doubt that such a case does truly occur ; but, at the same time, I apprehend it

to be a rare occurrence ; and that the disease much more frequently begins in, and chiefly affects, the pleura investing the lungs, producing all the symptoms supposed to belong to what has been called the *Pleuritis vera*.

CCCXLII.

Some physicians have imagined, that there is a case of pneumonic inflammation particularly entitled to the appellation of *Peripneumony* ; and that is, the case of an inflammation beginning in the parenchyma or cellular texture of the lungs, and having its seat chiefly there. But it seems to me very doubtful, if any acute inflammation of the lungs, or any disease which has been called *Peripneumony*, be of that kind. It seems probable, that every acute inflammation begins in membranous parts ; and, in every dissection of persons dead of *peripneumony*, the external membrane of the lungs, or some part of the pleura, has appeared to have been considerably affected.

CCCXLIII.

An inflammation of the pleura covering the upper surface of the diaphragm, has been distinguished by the appellation of *Paraphrenitis*, as supposed to be attended with the peculiar symptoms of delirium, risus sardonius, and other convulsive motions ; but it is certain, that an inflammation of that portion of the
pleura,

pleura, and affecting also even the muscular substance of the diaphragm, has often taken place without any of these symptoms; and I have not met with either dissections, or any accounts of dissections, which support the opinion, that an inflammation of the pleura covering the diaphragm, is attended with delirium more commonly than any other pneumonic inflammation.

CCCXLIV.

With respect to the seat of pneumonic inflammation, I must observe further, that although it may arise and subsist chiefly in one part of the pleura only, it is however frequently communicated to other parts of the same, and commonly communicates a morbid affection through its whole extent.

CCCXLV.

The remote cause of pneumonic inflammation, is, commonly, cold applied to the body, obstructing perspiration, and determining to the lungs; while at the same time the lungs themselves are exposed to the action of cold. These circumstances operate especially, when an inflammatory diathesis prevails in the system; and consequently, upon persons of the greatest vigour; in cold climates; in the winter season; and particularly in the spring, when vicissitudes of heat and cold are fre-

quent. The disease, however, may arise in any season when such vicissitudes occur.

Other remote causes also may have a share in this matter ; such as every means of obstructing, straining, or otherwise injuring, the pneumonic organs.

Pneumonic inflammation may happen to persons of any age, but rarely to those under the age of puberty ; and most commonly it affects persons somewhat advanced in life, as those between forty five and sixty years ; those, too, especially of a robust and full habit.

The pneumonic inflammation has been sometimes so much an epidemic, as to occasion a suspicion of its depending upon a specific contagion ; but I have not met with any evidence in proof of this. See MORGAGNI *de causis et sedibus morborum*, epist. xxi. art. 26.

CCCXLVI.

The pneumonic, like other inflammations, may terminate by resolution, suppuration, or gangrene ; but it has also a termination peculiar to itself, as has been hinted above, (CCLIX) ; and that is, when it is attended with an effusion of blood into the cellular texture of the lungs, which soon interrupting the circulation of the blood through this viscus, produces a fatal suffocation. This, indeed, seems to be the most common termination of pneumonic inflammation, when it ends
fatally ;

fatally ; for, upon the dissection of almost every person dead of the disease, it has appeared that such an effusion had happened.

CCCXLVII.

From these dissections also we learn, that pneumonic inflammation commonly produces an exudation from the internal surface of the pleura ; which appears partly as a soft viscid crust, often of a compact, membranous form, covering every where the surface of the pleura, and particularly those parts where the lungs adhere to the pleura costalis, or mediastinum ; and this crust seems always to be the cement of such adhesions.

The same exudation shows itself, also, by a quantity of a serous whitish fluid, commonly found in the cavity of the thorax ; and some exudation or effusion is usually found to have been made likewise into the cavity of the pericardium.

CCCXLVIII.

It seems probable, too, that a like effusion is sometimes made into the cavity of the bronchiæ ; for, in some persons who have died after labouring under a pneumonic inflammation for a few days only, the bronchiæ have been found filled with a considerable quantity of a serous and thickish fluid ; which, I think, must be considered rather as the effusion men-

tioned, having had its thinner parts taken off by respiration, than as a pus so suddenly formed in the inflamed part.

CCCXLIX.

It is, however, not improbable, that this effusion, as well as that made into the cavities of the thorax and pericardium, may be a matter of the same kind with that which, in other inflammations, is poured into the cellular texture of the parts inflamed, and there converted into pus; but, in the thorax and pericardium, it does not always assume that appearance, because the crust covering the surface prevents the absorption of the thinner part. This absorption, however, may be compensated in the bronchiæ by the drying power of the air; and therefore the effusion into them may put on a more purulent appearance.

In many cases of pneumonic inflammation, when the SPUTA are very copious, it is difficult to suppose that the whole of them proceed from the mucous follicles of the bronchiæ. It seems more probable that a great part of them may proceed from the effused serous fluid we have been mentioning; and this too will account for the sputa being so often of a purulent appearance. Perhaps the same thing may account for that purulent expectoration, as well as that purulent matter found in the bronchiæ, which the learned Mr. de Haen

Haen says he had often observed, when there was no ulceration of the lungs; and this explanation, is at least more probable, than Mr. de Haen's supposition of a pus formed in the circulating blood.

CCCL.

To conclude this subject, it would appear, that the effusion into the bronchiæ, which we have mentioned, often concurs with the effusion of red blood in occasioning the suffocation, which fatally terminates pneumonic inflammation; that the effusion of serum alone may have this effect; and, that the serum poured out in a certain quantity, rather than any debility in the powers of expectoration, is the cause of that ceasing of expectoration which very constantly precedes the fatal event. For, in many cases, the expectoration has ceased, when no other symptoms of debility have appeared, and when, upon dissection, the bronchiæ have been found full of liquid matter. Nay, it is even probable, that, in some cases, such an effusion may take place, without any symptoms of violent inflammation; and, in other cases, the effusion taking place, may seem to remove the symptoms of inflammation which had appeared before, and thus account for those unexpected fatal terminations which have sometimes happened. Possibly this effusion may account also for many of the phenomena of the Peripneumonia Notha.

CCCLI.

Pneumonic inflammation seldom terminates by resolution, without being attended with some evident evacuation. An hemorrhagy from the nose happening upon some of the first days of the disease, has sometimes put an end to it ; and it is said, that an evacuation from the hemorrhoidal veins, a bilious evacuation by stool, and an evacuation of urine with a copious sediment, have severally had the same effect ; but such occurrences have been rare and unusual.

The evacuation most frequently attending, and seeming to have the greatest effect in promoting resolution, is an expectoration of a thick white or yellowish matter, a little streaked with blood, copious, and brought up without either much or violent coughing.

Very frequently the resolution of this disease is attended with, and perhaps produced by, a sweat, which is warm, fluid, copious over the whole body, and attended with an abatement of the frequency of the pulse, of the heat of the body, and of other febrile symptoms.

CCCLII.

The prognostics in this disease are formed from observing the state of the principal symptoms.

A violent pyrexia is always dangerous.

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The danger, however, is chiefly denoted by the difficulty of breathing. When the patient can lie on one side only ; when he can lie on neither side, but upon his back only ; when he cannot breathe with tolerable ease, except the trunk of his body be erect ; when, even in this posture, the breathing is very difficult, and attended with a turgescence and flushing of the face, together with partial sweats about the head and neck, and an irregular pulse ; these circumstances mark the difficulty of breathing in progressive degrees, and, consequently, in proportion, the danger of the disease.

A frequent violent cough aggravating the pain, is always the symptom of an obstinate disease.

As I apprehend that the disease is hardly ever resolved, without some expectoration ; so a dry cough must be always an unfavourable symptom.

As the expectoration formerly described, marks that the disease is proceeding to a resolution ; so an expectoration which has not the conditions there mentioned, must denote at least a doubtful state of the disease ; but the marks taken from the colour of the matter, are for the most part fallacious.

An acute pain, very much interrupting inspiration, is always the mark of a violent disease ; though not of one more dangerous, than an obtuse pain, attended with very difficult respiration.

When the pains, which at first had affected one side only, have afterwards spread into the other ; or when, leaving the side first affected, they entirely pass into the other ; these are always marks of an increasing, and therefore of a dangerous, disease.

A delirium coming on during a pneumonic inflammation, is constantly a symptom denoting much danger.

CCCLIII.

When the termination of this disease proves fatal, it is on one or other of the days of the first week, from the third to the seventh. This is the most common case ; but in a few instances, death has happened at a later period of the disease.

When the disease is violent, but admitting of resolution, this also happens frequently in the course of the first week ; but, in a more moderate state of the disease, the resolution is often delayed to the second week.

The disease, on some of the days from the third to the seventh, generally suffers a remission ; which, however, may be often fallacious, as the disease does sometimes return again with as much violence as before, and then with great danger.

Sometimes the disease disappears on the second or third day, while an erysipelas makes its appearance on some external part ; and, if
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this continue fixed, the pneumonic inflammation does not recur.

CCCLIV.

Pneumonia, like other inflammations, often ends in suppuration or gangrene.

CCCLV.

When a pneumonia, with symptoms neither very violent nor very slight, has continued for many days, it is to be feared it will end in a suppuration. This, however, is not to be determined precisely by the number of days; for, not only after the fourth, but even after the tenth day, there have been examples of a pneumonia ending by a resolution; and if the disease has suffered some intermission, and again recurred, there may be instances of a resolution happening at a much later period from the beginning of the disease, than that just now mentioned.

CCCLVI.

But if a moderate disease, in spite of proper remedies employed, be protracted to the fourteenth day without any considerable remission, a suppuration is pretty certainly to be expected; and it will be still more certain, if no signs of resolution have appeared, or if an expectoration which had appeared shall have
again

again ceased, and the difficulty of breathing has continued or increased, while the other symptoms have rather abated.

CCCLVII.

That, in a pneumonia, the effusion is made, which may lay the foundation of a suppuration, we conclude from the difficulty of breathing becoming greater when the patient is in a horizontal posture, or when he can lie more easily upon the affected side.

CCCLVIII.

That, in such cases, a suppuration has actually begun, may be concluded from the patient's being frequently affected with slight cold shiverings, and with a sense of cold felt sometimes in one and sometimes in another part of the body. We form the same conclusion also from the state of the pulse, which is commonly less frequent and softer, but sometimes quicker and fuller, than before.

CCCLIX.

That a suppuration is already formed, may be inferred from there being a considerable remission of the pain which had before subsisted, while, along with this, the cough, and especially the dyspnœa, continue, and are rather augmented. At the same time, the frequency

quency of the pulse is rather increased; the feverish state suffers considerable exacerbations every evening, and by degrees a hectic in all its circumstances comes to be formed.

CCCLX.

The termination of Pneumonia by gangrene, is much more rare than has been imagined; and, when it does occur, it is usually joined with the termination by effusion (CCCXLVI), and the symptoms of the one are hardly to be distinguished from those of the other.

CCCLXI.

The cure of pneumonic inflammation must proceed upon the general plan (CCLXIV); but the importance of the part affected and the danger to which it is exposed, require that the remedies be fully, as well as early, employed.

CCCLXII.

The remedy chiefly to be depended upon, is that of bleeding at the arm; which will be performed with most advantage in the arm of the side affected; but may be done in either arm, as may be most convenient for the patient or the surgeon. The quantity drawn must be suited to the violence of the disease, and to the
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the vigour of the patient ; and generally ought to be as large as this last circumstance will allow.

The remission of pain, and the relief of respiration during the flowing of the blood, may limit the quantity to be then drawn ; but if these symptoms of relief do not appear, the bleeding should be continued till the symptoms of a beginning syncope come on. It is seldom that one bleeding, however large, will prove a cure of this disease ; and although the pain and difficulty of breathing may be much relieved by the first bleeding, these symptoms commonly, and after no long interval, recur ; often with as much violence as before. In the event of such recurrence, the bleeding is to be repeated, even in the course of the same day, and perhaps to the same quantity as before.

Sometimes the second bleeding may be larger than the first. There are persons who, by their constitution, are ready to faint even upon a small bleeding ; and, in such persons, this may prevent the drawing so much blood at first as a pneumonic inflammation might require ; but, as the same persons are frequently found to bear after bleedings better than the first, this allows the second and subsequent bleedings to be larger, and to such a quantity as the symptoms of the disease may seem to demand.

CCCLXIII.

It is according to the state of the symptoms that bleedings are to be repeated ; and they will

will be more effectual when practised in the course of the first three days, than afterwards ; but they are not to be omitted, although four days of the disease may have already elapsed. If the physician shall not have been called in sooner ; or if the bleedings practised during the first days shall not have been large enough, or even although these bleedings shall have procured some remission ; yet, upon the recurrence of the urgent symptoms, the bleeding should be repeated at any period of the disease, especially within the first fortnight ; and even afterwards, if a tendency to suppuration be not evident, or if, after a seeming solution, the disease shall have again returned.

CCCLXIV.

With respect to the quantity of blood which ought, or which with safety may be taken away, no general rules can be delivered, as it must be very different, according to the state of the disease, and the constitution of the patient. In an adult male of tolerable strength, a pound of blood, avoirdupois, is a full bleeding. Any quantity above twenty ounces is a large, and any quantity below twelve a small, bleeding. A quantity of from four to five pounds, in the course of two or three days, is generally as much as such patients will safely bear ; but, if the intervals between the bleedings and the whole of the time during which the bleedings have been employed

employed have been long, the quantity taken upon the whole may be greater.

CCCLXV.

When a large quantity of blood has been already taken from the arm, and when it is doubtful if more can with safety be drawn in that manner, some blood may still be taken by cupping and scarifying. Such a measure will be more particularly proper, when the continuance or recurrence of pain, rather than the difficulty of breathing, becomes the urgent symptom; and then the cupping and scarifying should be made as near to the pained part as can conveniently be done.

CCCLXVI.

An expectoration takes place sometimes very early in this disease; but if, notwithstanding that, the urgent symptoms should still continue, the expectoration must not supersede the bleedings mentioned; and during the first days of the disease, its solution is not to be trusted to the expectoration alone. It is in a more advanced stage only, when the proper remedies have been before employed, and when the symptoms have suffered a considerable remission, that the entire cure may be trusted to a copious and free expectoration.

CCCLXVII.

CCCLXVII.

During the first days of the disease, I have not found that bleeding stops expectoration. On the contrary, I have often observed bleeding promote it; and it is in a more advanced stage of the disease only, when the patient, by large evacuations, and the continuance of the disease, has been already exhausted, that bleeding seems to stop expectoration. It appears to me, that even then bleeding does not stop expectoration so much by weakening the powers of expectoration, as by favouring the serous effusion into the bronchiæ (CCCXLVIII), and thereby preventing it.

CCCLXVIII.

While the bleedings we have mentioned shall be employed, it will be necessary to employ also every part of the antiphlogistic regimen (CXXX—CXXXII), and particularly to prevent the irritation which might arise from any increase of heat. For this purpose, it will be proper to keep the patient out of bed, while he can bear it easily; and, when he cannot, to cover him very lightly while he lies in bed. The temperature of his chamber ought not to exceed sixty degrees of Fahrenheit's thermometer; and whether it may be at any time colder, I am uncertain.

CCCLXIX.

CCCLXIX.

Mild and diluent drinks, moderately tepid, at least never cold, given by small portions at a time, ought to be administered plentifully. These drinks may be impregnated with vegetable acids. They may be properly accompanied also with nitre, or some other neutrals; but these salts should be given separately from the drink.

It has been alleged, that both acids and nitre are ready to excite coughing, and in some persons they certainly have this effect; but, except in persons of a peculiar habit, I have not found their effects in exciting cough so considerable or troublesome as to prevent our seeking the advantages otherwise to be obtained from these medicines.

CCCLXX.

Some practitioners have doubted, if purgatives can be safely employed in this disease; and indeed a spontaneous diarrhœa occurring in the beginning of the disease has seldom proved useful; but I have found the moderate use of cooling laxatives generally safe; and have always found it useful to keep the belly open by frequent emollient glysters.

CCCLXXI.

To excite full vomiting by emetics, I judge to be a dangerous practice in this disease; but

I have found it useful to exhibit nauseating doses ; and, in a somewhat advanced state of the disease, I have found such doses prove the best means of promoting expectoration.

CCCLXXII.

Fomentations and poultices applied to the pained part have been recommended, and may be useful ; but the application of them is often inconvenient, and may be entirely omitted for the sake of the more effectual remedy, blistering.

Very early in the disease, a blister should be applied as near to the pained part as possible. But as, when the irritation of a blister is present, it renders bleeding less effectual ; so the application of the blister should be delayed till a bleeding shall have been employed. If the disease be moderate, the blister may be applied immediately after the first bleeding ; but if the disease be violent, and it is presumed that a second bleeding may be necessary soon after the first, it will then be proper to delay the blister till after the second bleeding, when it may be supposed that any farther bleeding may be postponed till the irritation arising from the blister shall have ceased. It may be frequently necessary in this disease to repeat the blistering ; and, in that case, the plaisters should always be applied somewhere on the thorax ; for, when applied to more distant parts, they have little effect. The keeping
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the blistered parts open, and making what is called a perpetual blister, has much less effect than a fresh blistering.

CCCLXXIII.

As this disease often terminates by an expectoration, so various means of promoting this have been proposed ; but none of them appear to be very effectual ; and some of them, being acrid stimulant substances, cannot be very safe.

The gums usually employed seem too heating ; squills seem to be less so ; but they are not very powerful, and sometimes inconvenient by the constant nausea they induce.

The volatile alkali may be of service as an expectorant ; but it should be reserved for an advanced state of the disease.

Mucilaginous and oily demulcents appear to be useful, by allaying that acrimony of the mucus which occasions too frequent coughing ; and which coughing prevents the stagnation and thickening of the mucus, and thereby its becoming mild.

The receiving into the lungs the steams of warm water impregnated with vinegar, has often proved useful in promoting expectoration.

But, of all other remedies, the most powerful for this purpose, are antimonial medicines, given in nauseating doses, as in CLXXIX. Of these, however, I have not found the
kermes

kermes mineral more efficacious than emetic tartar, or antimonial wine ; and the dose of the kermes is much more uncertain than that of the others.

CCCLXXIV.

Though a spontaneous sweating often proves the crisis of this disease, it ought not to be excited by art, unless with much caution. At least, I have not yet found it either so effectual or safe, as some writers have alleged. When, after some remission of the symptoms, spontaneous sweats of a proper kind arise, they may be encouraged ; but it ought to be without much heat, and without stimulant medicines. If, however, the sweats be partial and clammy only, and a great difficulty of breathing still remain, it will be very dangerous to encourage them.

CCCLXXV.

Physicians have differed much in opinion with regard to the use of opiates in pneumonic inflammation. To me it appears, that, in the beginning of the disease, and before bleeding and blistering have produced some remission of the pain, and of the difficulty of breathing, opiates have a very bad effect, by their increasing the difficulty of breathing, and other inflammatory symptoms. But in a more advanced state of the disease, when the difficulty
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of breathing has abated, and when the urgent symptom is a cough, proving the chief cause of the continuance of the pain and of the want of sleep, opiates may be employed with great advantage and safety. The interruption of the expectoration, which they seem to occasion, is for a short time only ; and they seem often to promote it, as they occasion a stagnation of what was by frequent coughing dissipated insensibly, and therefore give the appearance of what physicians have called *Concocted Matter*.

C H A P. VII.

OF THE PERIPNEUMONIA NOTHA,
OR BASTARD PERIPNEUMONY.

CCCLXXVI.

A DISEASE under this name is mentioned in some medical writings of the sixteenth century ; but it is very doubtful if the name was then applied to the same disease to which we now apply it. It appears to me, that unless some of the cases described under the title of Catarrhus Suffocativus be supposed to have been of the kind I am now to treat of, there was no description of this disease given before that by Sydenham, under the title I have employed here.

CCCLXXVII.

After Sydenham, Boerhaave was the first who in a system took notice of it as a distinct disease ; and he has described it in his aphorisms, although with some circumstances different from those in the description of Sydenham. Of late, Mr. Lieutaud has with great confidence asserted, that Sydenham and Boerhaave

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had, under the same title, described different diseases ; and that, perhaps, neither of them had on this subject delivered any thing but hypothesis.

CCCLXXVIII.

Notwithstanding this bold assertion, I am humbly of opinion, and the Baron Van Swieten seems to have been of the same, that Sydenham and Boerhaave did describe under the same title, one and the same disease. Nay, I am further of opinion, that the disease described by Mr. Lieutaud himself, is not essentially different from that described by both the other authors. Nor will the doubts of the very learned, but modest Morgagni, on this subject, disturb us, if we consider, that while very few describers of diseases either have it in their power, or have been sufficiently attentive in distinguishing between the essential and accidental symptoms of disease ; so, in a disease which may have not only different, but a greater number of symptoms, in one person than it has in another, we need not wonder that the descriptions of the same disease by different persons should come out in some respects different. I shall, however, enter no further into this controversy ; but endeavour to describe the disease as it has appeared to myself ; and, as I judge, in the essential symptoms, much the same as it has appeared to all the other authors mentioned.

CCCLXXIX.

CCCLXXIX.

This disease appears at the same seasons that other pneumonic and catarrhal affections commonly do; that is, in autumn and in spring. Like these diseases, also, it is seemingly occasioned by sudden changes of the weather from heat to cold. It appears, also, during the prevalence of contagious catarrhs; and it is frequently under the form of the *Peripneumonia Notha*, that these catarrhs prove fatal to elderly persons.

This disease attacks most commonly persons somewhat advanced in life, especially those of a full phlegmatic habit; those who have before been frequently liable to catarrhal affections, and those who have been much addicted to the large use of fermented and spirituous liquors.

The disease commonly comes on with the same symptoms as other febrile diseases; that is, with alternate chills and heats; and the symptoms of pyrexia are sometimes sufficiently evident; but in most cases these are very moderate, and in some hardly at all appear. With the first attack of the disease, a cough comes on; usually accompanied with some expectoration; and in many cases there is a frequent throwing up of a considerable quantity of a viscid opaque mucus. The cough often becomes frequent and violent; is sometimes accompanied with a rending headach;

and, as in other cases of cough, a vomiting is sometimes excited by it. The face is sometimes flushed, and some giddiness or drowsiness often attends the disease. A difficulty of breathing, with a sense of oppression, or straitening in the chest, with some obscure pains there, and a sense of lassitude over the whole body, very constantly attend this disease. The blood drawn in this disease, shows a buffy surface, as in other inflammatory affections.

The disease has often the appearance only of a more violent catarrh, and after the employment of some remedies is entirely relieved by a free and copious expectoration. In other cases, however, the feverish and catarrhal symptoms are at first very moderate, and even slight ; but, after a few days, these symptoms suddenly become considerable, and put an end to the patient's life when the indications of danger were before very little evident.

CCCLXXX.

From the different circumstances in which this disease appears, the pathology of it is difficult. It is certainly often no other at first than a catarrhal affection, which, in elderly persons, is frequently attended with a large afflux of mucus to the lungs ; and it was on this footing that Sydenham considered it as only differing in degree from his *Febris Hyemalis*. A catarrh, however, is strictly an affection of
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the mucous membrane and follicles of the bronchiæ alone ; but it may readily have, and frequently has, a degree of pneumonic inflammation joined to it ; and in that case may prove more properly the peculiar disease we treat of here. But, further, as pneumonic inflammation very often produces an effusion of serum into the bronchiæ (CCCXLVIII), so this, in elderly persons, may occur in consequence of a slight degree of inflammation ; and when it does happen, will give the exquisite and fatal cases of the peripneumonia notha.

CCCLXXXI.

After this attempt to establish the pathology, the method of cure in the different circumstances of the disease will not be difficult.

In case the fever, catarrhal and pneumonic symptoms, are immediately considerable, a bloodletting will certainly be proper and necessary ; but, where these symptoms are moderate, a bloodletting will hardly be requisite ; and, when an effusion is to be feared, the repetition of bloodletting may prove extremely hurtful.

In all cases, the remedies chiefly to be depended upon, are vomiting and blistering.

Full vomiting may be frequently repeated, and nauseating doses ought to be constantly employed.

Purging may perhaps be useful ; but as it is seldom so in pneumonic affections, nothing but gentle laxatives are here necessary.

In all the circumstances of this disease, the antiphlogistic regimen is proper ; cold is to be guarded against ; but much external heat is to be as carefully avoided.

CCCLXXXII.

If a person sweats easily, and it can be brought out by the use of mild tepid liquors only, the practice may in such persons be tried. See MORGAGNI *De Sed. et Caus.* Epist. xiii. Art. 4.

CCCLXXXIII.

I might here, perhaps, give a separate section on the Carditis and Pericarditis, or the Inflammations of the Heart and Pericardium ; but they hardly require a particular consideration. An acute inflammation of the pericardium is almost always a part of the same pneumonic affection I have been treating of ; and is not always distinguished by any different symptoms ; or, if it be, does not require any different treatment. The same may be said of an acute inflammation of the heart itself ; and when it happens that the one or other is discovered by the symptoms of palpitation or syncope, no more will be implied than
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that the remedies of pneumonic inflammation should be employed with greater diligence.

From dissections, which show the heart and pericardium affected with erosions, ulcerations, and abscesses, we discover, that these parts had been before affected with inflammation ; and that in cases where no symptoms of pneumonic inflammation had appeared ; it may therefore be alleged, that those inflammations of the heart and pericardium should be considered as diseases independent of the pneumonic. This indeed is just ; but the history of such cases proves, that those inflammations had been of a chronic kind, and hardly discovering themselves by any peculiar symptoms ; or, if attended with symptoms marking an affection of the heart, these were, however, such as have been known frequently to arise from other causes than inflammation. There is, therefore, upon the whole, no room for our treating more particularly of the inflammation of the heart or pericardium.

C H A P. VIII.

OF THE GASTRITIS, OR INFLAMMATION OF THE STOMACH.

CCCLXXXIV.

AMONG the inflammations of the abdominal region, I have given a place in our Nosology to the Peritonitis ; comprehending under that title, not only the inflammations affecting the peritonæum lining the cavity of the abdomen, but also those affecting the extensions of this membrane in the omentum and mesentery. It is not, however, proposed to treat of them here, because it is very difficult to say by what symptoms they are always to be known ; and farther, because, when known, they do not require any remedies beside those of inflammation in general. I proceed, therefore, to treat of those inflammations, which, affecting viscera of peculiar functions, both give occasion to peculiar symptoms, and require some peculiarities in the method of cure ; and I shall begin with the inflammation of the stomach.

CCCLXXXV.

CCCLXXXV.

The inflammation of the stomach is of two kinds; Phlegmonic, or Erythematic*. The first may be seated in what is called the Nervous Coat of the stomach, or in the peritonæum investing it. The second is always seated in the villous coat and cellular texture immediately subjacent.

CCCLXXXVI.

The Phlegmonic inflammation of the stomach, or what has been commonly treated of under the title of Gastritis, is known by an acute pain in some part of the region of the stomach, attended with pyrexia, with frequent vomiting, especially upon occasion of any thing being taken down into the stomach, and frequently with hickup. The pulse is commonly small and hard; and there is a greater loss of strength in all the functions of the body, than in the case of almost any other inflammation.

CCCLXXXVII.

This inflammation may be produced by various causes; as, by external contusion; by
M 5 acrids.

* This is a new term; but whoever considers what is said in CCLXXIV, will, I expect, perceive the propriety, and even the necessity, of it.

acrids of various kinds taken into the stomach ; frequently by very cold drink, taken into it, while the body is very warm ; and sometimes by over distention, from the having taken in a large quantity of food of difficult digestion. All these may be considered as external causes ; but the disease sometimes arises also from internal causes not so well understood. It may arise from inflammations of the neighbouring parts communicated to the stomach, and is then to be considered as a symptomatic affection only. It may arise also from various acrimonies generated within the body, either in the stomach itself, or in other parts, and poured into the cavity of the stomach. These are causes more directly applied to the stomach ; but there are perhaps others originating elsewhere, and affecting the stomach only sympathetically. Such may be supposed to have acted in the case of putrid fevers and exanthematic pyrexiaë ; in which, upon dissection, it has been discovered that the stomach had been affected with inflammation.

CCCLXXXVIII.

From the sensibility of the stomach, and its communication with the rest of the system, it will be obvious, that the inflammation of this organ, by whatever causes produced, may be attended with fatal consequences. In particular, by the great debility which such an inflammation

flammation suddenly produces, it may quickly prove fatal, without running the common course of inflammations.

When it lasts long enough to follow the ordinary course of other inflammations, it may terminate by resolution, gangrène, or suppuration. The scirrhoties which are often discovered affecting the stomach, are seldom known to be the consequences of inflammation.

CCCLXXXIX.

The tendency of this disease to admit of resolution, may be known by its having arisen from no violent cause ; by the moderate state of the symptoms ; and by a gradual remission of these, especially in consequence of remedies employed in the course of the first, or at farthest the second, week of the disease.

CCCXC.

The tendency to suppuration may be known by the symptoms continuing, in a moderate degree, for more than one or two weeks ; and likewise by a considerable remission of the pain, while a sense of weight and anxiety still remain.

When an abscess has been formed, the frequency of the pulse is at first abated ; but soon after, it is again increased, with frequent cold shiverings, and with marked exacerbations in

the afternoon and evening, followed by night sweatings and other symptoms of hectic fever. These at length prove fatal, unless the abscess open into the cavity of the stomach, the pus be evacuated by vomiting, and the ulcer soon heal.

CCCXCI.

The tendency to gangrene may be suspected from the violence of the symptoms not yielding to the remedies employed during the first days of the disease ; and that a gangrene has already begun, may be known from the sudden remission of the pain, while the frequency of the pulse continues, and at the same time becomes weaker, accompanied with other marks of an increasing debility in the whole system.

CCCXCII.

From the dissection of dead bodies it appears, that the stomach very often has been affected with inflammation, when the characteristic symptoms of it (CCCLXXXVI) had not appeared ; and therefore it is very difficult to lay down any general rules for the cure of this disease.

CCCXCIII.

It is only in the case of phlegmonic inflammation, as characterised in CCCLXXXVI.
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that we can advise the cure or resolution to be attempted by large and repeated bleedings employed early in the disease ; and we are not to be deterred from these by the smallness of the pulse ; for, after bleeding, it commonly becomes fuller and softer. After bleeding, a blister ought to be applied to the region of the stomach ; and the cure will be assisted by fomentations of the whole abdomen, as well as by frequent emollient and laxative glysters.

CCCXCIV.

In this disease, the irritability of the stomach will not admit of any medicines being thrown into it ; and, if any internal medicines can be supposed necessary, they must be exhibited in glysters. The giving of drink may be tried ; but it ought to be of the very mildest kind, and in very small quantities at a time.

CCCXCV.

Opiates, in whatever manner exhibited, are very hurtful during the first days of the disease ; but when its violence shall have abated, and when the violence of the pain and vomiting recur at intervals only, opiates given in glysters may be cautiously tried, and sometimes have been employed with advantage.

CCCXCVI.

CCCXCVI.

A tendency to suppuration, in this disease, is to be obviated by the means just now proposed. After a certain duration of the disease, it cannot be prevented by any means whatever ; and when actually begun, must be left to nature ; the business of the physician being only to avoid all irritation.

CCCXCVII.

A tendency to gangrene can be obviated in no other way than by the means suggested CCCXCIII, employed early in the disease ; and, when it does actually supervene, admits of no remedy.

CCCXCVIII.

Erythematic inflammations of the stomach, are more frequent than those of the phlegmonic kind. It appears, at least, from dissections, that the stomach has often been affected with inflammation, when neither pain nor pyrexia had before given any notice of it ; and such inflammation I apprehend to have been chiefly of the erythematic kind. This species of inflammation also, is especially to be expected from acrimony of any kind thrown into the stomach ; and would certainly occur more frequently from such a cause, were not the
interior

interior surface of this organ commonly defended by mucus exuding in large quantities from the numerous follicles placed immediately under the villous coat. Upon many occasions, however, the exudation of mucus is prevented, or the liquid poured out is of a less viscid kind, so as to be less fitted to defend the subjacent nerves ; and it is in such cases that matters even of moderate acrimony, may produce any erythematic affection of the stomach.

CCCXCIX.

From what has been said it must appear, that an erythematic inflammation of the stomach may frequently occur ; but will not always discover itself, as it sometimes takes place without pyrexia, pain, or vomiting.

CCCC.

There are cases, however, in which it may be discovered. The affection of the stomach sometimes spreads into the œsophagus, and appears in the pharynx, as well as on the whole internal surface of the mouth. When, therefore, an erythematic inflammation affects the mouth and fauces, and when at the same time there shall be in the stomach an unusual sensibility to all acrids, with a frequent vomiting, there can be little doubt of the stomach being affected with the same inflammation
that

that has appeared in the fauces. Even when no inflammation appears in the fauces, yet if some degree of pain be felt in the stomach, if there be a want of appetite, an anxiety, frequent vomiting, an unusual sensibility with respect to acrids, some thirst, and frequency of pulse, there will then be room to suspect an erythematic inflammation of the stomach; and we have known such symptoms, after some time, discover their cause more clearly by the appearance of the inflammation in the fauces or mouth.

Erythematic inflammation is often disposed to spread from one place to another on the same surface; and, in doing so, to leave the place it had at first occupied. Thus, such an inflammation has been known to spread successively along the whole course of the alimentary canal, occasioning in the intestines diarrhœa, and in the stomach vomitings; the diarrhœa ceasing when the vomitings came on, or the vomitings upon the coming on of the diarrhœa.

CCCCI.

When an erythematic inflammation of the stomach shall be discovered, it is to be treated differently, according to the difference of its causes and symptoms.

When it is owing to acrid matters taken in by the mouth, and when these may be supposed still present in the stomach, they are to

be

be washed out by throwing in a large quantity of warm and mild liquids, and by exciting vomiting. At the same time, if the nature of the acrimony and its proper corrector be known, this should be thrown in ; or if a specific corrector be not known, some general demulcents should be employed.

CCCCII.

These measures, however, are more suited to prevent the inflammation, than to cure it after it has taken place. When this last may be supposed to be the case, if it be attended with a sense of heat, with pain and pyrexia, according to the degree of these symptoms the measures proposed in CCCXCIII, are to be more or less employed.

CCCCIII.

When an erythematic inflammation of the stomach has arisen from internal causes, if pain and pyrexia accompany the disease, some bleeding in persons not otherwise weakened, may be employed ; but, as the affection often arises in putrid diseases, and in convalescents from fever ; so in these cases, bleeding is inadmissible ; all that can be done being to avoid irritation, and to throw into the stomach what quantity of acids, and of acescent aliments, it shall be found to bear.

In

In some conditions of the body, in which this disease arises, the Peruvian bark and bitters may seem to be indicated ; but an erythematic state of the stomach does not commonly allow of them.

C H A P. IX.

OF THE ENTERITIS, OR INFLAMMATION OF THE INTESTINES.

CCCCIV.

THE inflammation of the intestines, like that of the stomach, may be either phlegmonic, or erythematic ; but, on the subject of the latter, I have nothing to add to what has been said in the last chapter ; and shall here therefore treat of the phlegmonic inflammation only.

CCCCVI.

This inflammation may be known to be present, by a fixed pain of the abdomen, attended with pyrexia, costiveness, and vomiting. Practical writers mention the pain in this case as felt in different parts of the abdomen, according to the different seat of the inflammation ; and so, indeed, it sometimes happens ; but very often the pain spreads over the whole belly, and is felt more especially about the navel.

CCCCVII.

CCCCVII.

The Enteritis and Gastritis arise from like causes ; but the former, more readily than the latter, proceeds from cold applied to the lower extremities, or to the belly itself. The enteritis has likewise its own peculiar causes, as supervening upon the spasmodic colic, incarcerated hernia, and volvulus.

CCCCVIII.

Inflammations of the intestines have the same terminations as those of the stomach ; and, in both cases, the several tendencies are to be discovered by the same symptoms (CCCLXXXIX.—CCCXCI).

CCCCIX.

The cure of the enteritis is, in general, the same with that of the gastritis (CCCXCIII. & seq.) but in the enteritis, there is commonly more access to the introduction of liquids, of acid, aciescent, and other cooling remedies, and even of laxatives. As, however, a vomiting so frequently attends this disease, care must be taken not to excite that vomiting by either the quantity or the quality of any thing thrown into the stomach.

The same observation, with respect to the use of opiates, is to be made here as in the case of gastritis.

CCCCX.

CCCCX.

Under the title of Enteritis, it has been usual with practical writers to treat of the remedies proper for the colic, and its higher degree named *Ileus* ; but, although it be true that the enteritis and colic do frequently accompany each other, I still hold them to be distinct diseases, to be often occurring separately, and accordingly to require and admit of different remedies. I shall therefore delay speaking of the remedies proper for the colic, till I shall come to treat of this disease in its proper place.

CCCCXI.

What might be mentioned with respect to the suppuration or gangrene occurring in the enteritis may be sufficiently understood from what has been said on the same subject with respect to the gastritis.

C H A P. X.

OF THE HEPATITIS, OR INFLAMMATION OF THE LIVER.

CCCCXII.

THE inflammation of the liver seems to be of two kinds; the one acute, the other chronic.

CCCCXIII.

The acute is attended with pungent pain; considerable pyrexia; a frequent, strong, and hard pulse; and high coloured urine.

CCCCXIV.

The chronic hepatitis very often does not exhibit any of these symptoms; and it is only discovered to have happened, by our finding in the liver, upon dissection, large abscesses, which are presumed to be the effect of some degree of previous inflammation. As this chronic inflammation is seldom to be certainly known, and therefore does not lead to any determined practice, we omit treating of it
here,

here, and shall only treat of what relates to the acute species of the hepatitis.

CCCCXV.

The acute hepatitis may be known by a pain more or less acute in the right hypochondrium, increased by pressing upon the part. The pain is very often in such a part of the side as to make it appear like that of a pleurisy; and frequently, like that too, is increased on respiration. The disease is, in some instances, also attended with a cough, which is commonly dry, but sometimes humid; and when the pain thus resembles that of a pleurisy, the patient cannot lie easily except upon the side affected.

In every kind of acute hepatitis, the pain is often extended to the clavicle, and to the top of the shoulder. The disease is attended sometimes with hickup, and sometimes with vomiting. Many practical writers have mentioned the jaundice, or a yellow colour of the skin and eyes, as a very constant symptom of the hepatitis; but experience has shown, that it may often occur without any such symptom.

CCCCXVI.

The remote causes of hepatitis are not always to be discerned, and many have been assigned on a very uncertain foundation. The following seem to be frequently evident.

1. External

1. External violence from contusions or falls, and especially those which have occasioned a fracture of the cranium. 2. Certain passions of the mind. 3. Violent summer heats. 4. Violent exercise. 5. Intermittent and remittent fevers. 6. Cold applied externally, or internally ; and therefore in many cases the same causes which produce pneumonic inflammation, produce hepatitis ; and whence also the two diseases are sometimes joined together. 7. Various solid concretions or collections of liquid matter, in the substance of the liver, produced by unknown causes. Lastly, The acute is often induced by a chronic inflammation of this viscus.

CCCCXVII.

It has been supposed, that the hepatitis may be an affection either of the extremities of the hepatic artery, or of those of the vena portarum ; but of the last supposition there is neither evidence nor probability.

CCCCXVIII.

It seems probable, that the acute hepatitis is always an affection of the external membrane of the liver ; and that the parenchymatic is of the chronic kind. The acute disease may be seated either on the convex or on the concave surface of the liver. In the former case, a more pungent pain and hickup may be produced,

produced, and the respiration is more considerably affected. In the latter, there occurs less pain ; and a vomiting is produced, commonly by some inflammation communicated to the stomach. The inflammation of the concave surface of the liver, may be readily communicated to the gall bladder and biliary ducts ; and this perhaps is the only case of idiopathic hepatitis attended with jaundice.

CCCCXIX.

The hepatitis, like other inflammations, may end by resolution, suppuration, or gangrene ; and the tendency to the one or the other of these events, may be known from what has been delivered above.

CCCCXX.

The resolution of hepatitis is often the consequence of, or is attended with, evacuations of different kinds. A hemorrhagy, sometimes from the right nostril, and sometimes from the hemorrhoidal vessels, gives a solution of the disease. Sometimes a bilious diarrhœa contributes to the same event ; and the resolution of the hepatitis, as of other inflammations, is attended with sweating, and with an evacuation of urine, depositing a copious sediment. Can this disease be resolved by expectoration ? It would seem to be sometimes cured by an erysipelas appearing in some external part.

CCCCXXI.

When this disease has ended in suppuration, the pus collected may be discharged by the biliary ducts ; or, if the suppurated part does not any where adhere closely to the neighbouring parts, the pus may be discharged into the cavity of the abdomen ; but if, during the first state of inflammation, the affected part of the liver shall have formed a close adhesion to some of the neighbouring parts, the discharge of the pus after suppuration may be various, according to the different seat of the abscess. When seated on the convex part of the liver, if the adhesion be to the peritonæum lining the common teguments, the pus may make its way through these, and be discharged outwardly ; or, if the adhesion should have been to the diaphragm, the pus may penetrate through this, and into the cavity of the thorax, or of the lungs ; and through the latter may be discharged by coughing. When the abscess of the liver is seated on its concave part, then, in consequence of adhesions, the pus may be discharged into the stomach or the intestines ; and into these last, either directly, or by the intervention of the biliary ducts.

CCCCXXII.

The prognostics in this disease are established upon the general principles relating to inflammation,

flammation, upon the particular circumstances of the liver, and upon the particular state of its inflammation.

The cure of this disease must proceed upon the general plan ; by bleeding, more or less, according to the urgency of pain and pyrexia ; by the application of blisters ; by fomentations, of the external parts in the usual manner, and of the internal parts by frequent emollient glysters ; by frequently opening the belly by means of gentle laxatives, and by diluent and refrigerant remedies.

CCCCXXIII.

Although, in many cases, the chronic hepatitis does not clearly discover itself ; yet, upon many occasions, it may perhaps be discovered, or at least suspected, from those causes which might affect the liver (CCCXVI) having been applied ; from some fulness and some tenderness of weight in the right hypochondrium ; from some shooting pains at times felt in that region ; from some uneasiness or pain felt upon pressure in that part ; from some uneasiness from lying upon the left side ; and lastly, from some degree of pyrexia, combined with more or fewer of these symptoms.

When from some of these circumstances a chronic inflammation is to be suspected, it is to be treated by the same remedies as in the last paragraph, employed more or less as the

degree of the several symptoms shall more distinctly indicate.

CCCCXXIV.

When from either kind of inflammation a suppuration of the liver has been formed, and the abscess points outwardly, the part must be opened, the pus evacuated, and the ulcer healed according to the ordinary rules for cleansing and healing such abscesses and ulcers.

CCCCXXV.

I might here consider the Splenitis, or inflammation of the spleen ; but it does not seem necessary, because the disease very seldom occurs. When it does, it may be readily known by the character given in our Nosology ; and its various termination, as well as the practice which it requires, may be understood from what has been already said with respect to the inflammations of the other abdominal viscera.

C H A P. XI.

OF THE NEPHRITIS, OR THE INFLAMMATION OF THE KIDNEYS.

CCCCXXVI.

THIS disease, like other internal inflammations, is always attended with pyrexia ; and is especially known from the region of the kidney being affected by pain, commonly obtuse, sometimes pungent. This pain is not increased by the motion of the trunk of the body, so much as a pain of the rheumatic kind affecting the same region. The pain of the nephritis may be often distinguished by its shooting along the course of the ureter ; and is frequently attended with a drawing up of the testicle, and with a numbness of the limb on the side affected ; although, indeed, these symptoms most commonly accompany the inflammation arising from a calculus in the kidney or in the ureter. The nephritis is almost constantly attended with frequent vomiting, and often with costiveness and colic pains. Usually the state of the urine is changed ; it is most commonly of a deep red colour, is voided frequently, and in small

N. 3

quantity

quantity at a time. In more violent cases, the urine is sometimes colourless.

CCCCXXVII.

The remote causes of this disease may be various ; as, external contusion ; violent or long continued riding ; strains of the muscles of the back incumbent on the kidneys ; various acrids in the course of the circulation conveyed to the kidney ; and perhaps some other internal causes not yet well known. The most frequent is that of calculous matter obstructing the tubuli uriniferi, or calculi formed in the pelvis of the kidneys, and either sticking there, or fallen into the ureter.

CCCCXXVIII.

The various event of this disease may be understood from what has been delivered on the subject of other inflammations.

CCCCXXIX.

Writers, in treating of the cure of nephritis have commonly at the same time treated of the cure of the Calculus renalis ; but, though this may often produce nephritis, it is to be considered as a distinct and separate disease ; and what I have to offer as to the mode of treating it, must be reserved to its proper place.

Here

Here I shall treat only of the cure of the Nephritis Vera or Idiopathica.

CCCCXXX.

The cure of this proceeds upon the general plan, by bleeding, external fomentation, frequent emollient glysters, antiphlogistic purgatives, and the free use of mild and demulcent liquids. The application of blisters is hardly admissible; or, at least, will require great care, to avoid any considerable absorption of the cantharides.

CCCCXXXI.

The Cystitis, or inflammation of the bladder, is seldom a primary disease; and therefore is not to be treated of here. The treatment of it, so far as necessary to be explained, may be readily understood from what has been already delivered.

CCCCXXXII.

Of the visceral inflammations, there remains to be considered the inflammation of the Uterus; but I omit it here, because the consideration of it cannot be separated from that of the diseases of child bearing women.

C H A P. XII.

OF THE RHEUMATISM.

CCCCXXXIII.

OF this disease there are two species ; the one named the Acute, the other the Chronic rheumatism.

CCCCXXXIV.

It is the Acute Rheumatism which especially belongs to this place, as from its causes, symptoms, and methods of cure, it will appear to be a species of phlegmasia or inflammation.

CCCCXXXV.

This disease is frequent in cold, and more uncommon in warm, climates. It appears most frequently in autumn and spring, less frequently in winter when the cold is considerable and constant, and very seldom during the heat of summer. It may occur, however, at any season, if vicissitudes of heat and cold be for the time frequent.

CCCCXXXVI.

CCCCXXXVI.

The acute rheumatism generally arises from the application of cold to the body when any way unusually warm; or when one part of the body is exposed to cold whilst the other parts are kept warm; or lastly, when the application of the cold is long continued, as it is when wet or moist clothes are applied to any part of the body.

CCCCXXXVII.

These causes may affect persons of all ages; but the rheumatism seldom appears in either very young or in elderly persons, and most commonly occurs from the age of puberty to that of thirty five years.

CCCCXXXVIII.

These causes (CCCCXXXVI) may also affect persons of any constitution; but they most commonly affect those of a sanguine temperament.

CCCCXXXIX.

This disease is particularly distinguished by pains affecting the joints, for the most part the joints alone, but sometimes affecting also the muscular parts. Very often the pains

shoot along the course of the muscles, from one joint to another, and are always much increased by the action of the muscles belonging to the joint or joints affected.

CCCCXL.

The larger joints are most frequently affected ; such as the hip joint, and knees of the lower, and the shoulders and elbows of the upper extremities. The ankles and wrists are also frequently affected ; but the smaller joints, such as those of the toes or fingers, seldom suffer.

CCCCXLI.

This disease, although sometimes confined to one part of the body only, yet very often affects many parts of it ; and then it comes on with a cold stage, which is immediately succeeded by the other symptoms of pyrexia, and particularly by a frequent, full, and hard pulse. Sometimes the pyrexia is formed before any pains are perceived ; but more commonly pains are felt in particular parts, before any symptoms of pyrexia appear.

CCCCXLII.

When no pyrexia is present, the pain is sometimes confined to one joint only ; but, when any considerable pyrexia is present, al-
though

though the pain may be chiefly in one joint, yet it seldom happens but that the pains affect several joints often at the very same time, but for the most part shifting their place, and, having abated in one joint, become more violent in another. They do not commonly remain long in the same joint, but frequently shift from one to another, and sometimes return to joints formerly affected; and in this manner the disease often continues for a long time.

CCCCXLIII.

The pyrexia attending this disease has an exacerbation every evening, and is most considerable during the night, when the pains also become more violent; and it is at the same time that the pains shift their place from one joint to another. The pains seem to be also increased during the night, by the body being covered more closely, and kept warmer.

CCCCXLIV.

A joint, after having been for some time affected with pain, commonly becomes affected also with some redness and swelling, which is painful to the touch. It seldom happens, that a swelling coming on does not alleviate the pain of the joint; but the swelling does not always take off the pain entirely, nor secure the joint against a return of it.

CCCCXLV.

This disease is commonly attended with some sweating, which occurs early in the course of the disease; but it is seldom free or copious, and seldom either relieves the pains or proves critical.

CCCCXLVI.

In the course of this disease the urine is high coloured, and in the beginning without sediment; but as the disease advances, and the pyrexia has more considerable remissions, the urine deposits a lateritious sediment. This, however, does not prove entirely critical; for the disease often continues long after such a sediment has appeared in the urine.

CCCCXLVII.

When blood is drawn in this disease, it always exhibits the appearance mentioned
CCXXXVII.

CCCCXLVIII.

The acute rheumatism, though it has so much of the nature of the other phlegmasiæ, differs from all those hitherto mentioned, in this, that it is not apt to terminate in suppuration. This almost never happens in rheumatism;

tism; but the disease sometimes produces effusions of a transparent gelatinous fluid into the sheaths of the tendons. If we may be allowed to suppose that such effusions are frequent, it must also happen, that the effused fluid is commonly reabsorbed; for it has seldom happened, and never indeed to my observation, that considerable or permanent tumours have been produced, or such as required to be opened, and to have the contained fluid evacuated. Such tumours, however, have occurred to others, and the opening made in them has produced ulcers difficult to heal. Vide Storck. Ann. Med. II.

CCCCXLIX.

With the circumstances mentioned from CCCCXXXIX, to CCCCXLVIII, the disease often continues for several weeks. It seldom, however, proves fatal; and it rarely happens that the pyrexia continues to be considerable for more than two or three weeks. While the pyrexia abates in its violence, if the pains of the joints continue, they are less violent, more limited in their place, being confined commonly to one or a few joints only, and are less ready to change their place.

CCCCL.

When the pyrexia attending rheumatism has entirely ceased; when the swelling, and particularly

particularly the redness of the joints, are entirely gone ; but when pains still continue to affect certain joints, which remain stiff, which feel uneasy upon motion, or upon changes of weather ; the disease is named the Chronic Rheumatism, as it very often continues for a long time. As the chronic is commonly the sequel of the acute rheumatism, I think it proper to treat of the former also in this place.

CCCCLI.

The limits between the acute and chronic rheumatism are not always exactly marked.

When the pains are still ready to shift their place ; when they are especially severe in the night time ; when, at the same time, they are attended with some degree of pyrexia, and with some swelling, and especially with some redness of the joints ; the disease is to be considered as still partaking the nature of the acute rheumatism.

But, when there is no degree of pyrexia remaining ; when the pained joints are without redness ; when they are cold and stiff ; when they cannot easily be made to sweat ; or when, while a free and warm sweat is brought out on the rest of the body, it is only clammy and cold on the pained joints ; and when, especially, the pains of these joints are increased by cold, and relieved by heat applied to them ; the case is to be considered as that of a purely chronic rheumatism.

CCCCCLII.

CCCCCLII.

The chronic rheumatism may affect different joints ; but is especially ready to affect those joints which are surrounded with many muscles, and those of which the muscles are employed in the most constant and vigorous exertions. Such is the case of the vertebræ of the loins, the affection of which is named **Lumbago** ; or that of the hip joint, when the disease is named **Ischias**, or **Sciatica**.

CCCCCLIII.

Violent strains and spasms occurring on sudden and somewhat violent exertions, bring on rheumatic affections, which at first partake of the acute, but very soon change into the nature of the chronic rheumatism.

CCCCCLIV.

I have thus delivered the history of rheumatism ; and suppose, that, from what has been said, the remote causes, the diagnosis, and prognosis, of the disease, may be understood. The distinction of the rheumatic pains from those resembling them, which occur in the syphilis and scurvy, will be obvious, either from the seat of those pains, or from the concomitant symptoms peculiar to these diseases. The distinction of rheumatism from gout will
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be more fully understood from what is to be delivered in the following chapter.

CCCCLV.

With respect to the proximate cause of rheumatism, there have been various opinions. It has been imputed to a peculiar acrimony ; of which, however, in ordinary cases, I can find no evidence ; and, from the consideration of the remote causes, the symptoms, and cure of the disease, I think the supposition very improbable.

The cause of an Ischias Nervosa assigned by COTURNIUS, appears to me hypothetical, and is not supported by either the phenomena or method of cure. That, however, a disease of a rheumatic nature may be occasioned by an acrid matter applied to the nerves, is evident from the toothach, a rheumatic affection generally arising from a carious tooth.

That pains resembling those of rheumatism, may arise from deep seated suppurations, we know from some cases depending on such a cause, and which, in their symptoms, resemble the lumbago or ischias. I believe, however, that, by a proper attention, these cases depending on suppuration, may be commonly distinguished from the genuine cases of lumbago and ischias ; and, from what is said in CCCCXLVIII, I judge it to be at least improbable, that a genuine lumbago or ischias does ever end in suppuration.

CCCCLVI.

CCCCCLVI.

The proximate cause of rheumatism has been by many supposed to be a lentor of the fluids obstructing the vessels of the part ; but the same consideration as in CCXLI. 1, 2, 3, 4, and 5, will apply equally here for rejecting the supposition of a lentor.

CCCCCLVII.

While I cannot, therefore, find either evidence or reason for supposing that the rheumatism depends upon any change in the state of the fluids, I must conclude that the proximate cause of acute rheumatism, is commonly the same with that of other inflammations not depending upon a direct stimulus.

CCCCCLVIII.

In the case of rheumatism I suppose, that the most common remote cause of it, that is, cold applied, operates especially on the vessels of the joints, from these being less covered by a cellular texture than those of the intermediate parts of the limbs. I suppose further, that the application of cold produces a constriction of the extreme vessels on the surface, and at the same time an increase of tone or phlogistic diathesis in the course of them, from which arises an increased impetus of the blood,
and,

and, at the same time, a resistance to the free passage of it, and consequently inflammation and pain. Further, I suppose, that the resistance formed excites the vis medicatrix to a further increase of the impetus of the blood; and, to support this, a cold stage arises, a spasm is formed, and a pyrexia and phlogistic diathesis are produced in the whole system.

CCCCLIX.

According to this explanation, the cause of acute rheumatism appears to be exactly analogous to that of the inflammations depending on an increased afflux of blood to a part while it is exposed to the action of cold.

But there seems to be also, in the case of rheumatism, a peculiar affection of the fibres of the muscles. These fibres seem to be under some degree of rigidity, and therefore less easily admit of motion; and are pained upon the exertions of it.

It is also an affection of these fibres which gives an opportunity to the propagation of pains from one joint to another, along the course of the muscles; and which pains are more severely felt in the extremities of the muscles terminating in the joints, because beyond these the oscillations are not propagated.

This affection of the muscular fibres attending rheumatism, seems to explain why strains and spasms produce rheumatic affections; and, upon the whole, shows, that, with
an

an inflammatory affection of the sanguiferous system, there is also in rheumatism a peculiar affection of the muscular fibres, which has a considerable share in producing the phenomena of the disease.

CCCCLX.

Having thus given my opinion of the proximate cause of rheumatism, I proceed to treat of the cure.

CCCCLXI.

Whatever difficulty may occur with respect to the explanation given (CCCCLVIII, and CCCCLIX) this remains certain, that in acute rheumatism, at least in all those cases which do not arise from direct stimuli, there is an inflammatory affection of the parts, and a phlogistic diathesis in the whole system; and upon these is founded the method of cure, which frequent experience has approved of.

CCCCLXII.

The cure therefore requires, in the first place, an antiphlogistic regimen, and particularly a total abstinence from animal food, and from all fermented or spirituous liquors; substituting a vegetable or milk diet, and the plentiful use of bland diluent drinks.

CCCCLXIII.

CCCCLXIII.

Upon the same principle (CCCCL) at least with perhaps the same exception as above, bloodletting is the chief remedy of acute rheumatism. The blood ought to be drawn in large quantity, and the bleeding is to be repeated in proportion to the frequency, fullness, and hardness of the pulse, and to the violence of the pain. For the most part, large and repeated bleedings, during the first days of the disease, seem to be necessary, and accordingly have been very much employed; but to this some bounds are to be set; for very profuse bleedings occasion a slow recovery, and, if not absolutely effectual, are ready to produce a chronic rheumatism.

CCCCLXIV.

To avoid that debility of the system, which general bleedings are ready to occasion, the urgent symptom of pain may be often relieved by topical bleedings; and, especially when any swelling and redness have come upon a joint, the pain of it may be very certainly relieved by such bleedings; but, as the continuance of the disease seems to depend more upon the phlogistic diathesis of the whole system, than upon the affection of particular parts, so topical bleedings will not always supply the place of the general bleedings proposed above.

CCCCLXV.

CCCCLXV.

To take off the phlogistic diathesis prevailing in this disease, purging may be useful, if procured by medicines which do not stimulate the whole system, such as the neutral salts, and which have in some measure a refrigerant power. Purging, however, is not so powerful as bleeding, in removing phlogistic diathesis ; and, when the disease has become general and violent, frequent stools are inconvenient, and even hurtful, by the motion and pain which they occasion.

CCCCLXVI.

In acute rheumatism, applications to the pained parts are of little service. Fomentations, in the beginning of the disease, rather aggravate than relieve the pains. The rubefacients and camphire are more effectual in relieving the pains ; but generally they only shift the pain from one part into another, and do little towards the cure of the general affection. Blistering, applied to the pained part, may also be very effectual in removing the pain from it ; but will be of little use, except where the pains are much confined to one part.

CCCCLXVII.

CCCCLXVII.

The several remedies mentioned from (CCCCLI, to CCCCLV) moderate the violence of the disease, and sometimes remove it entirely ; but they sometimes fail in this, and leave the cure imperfect. The attempting a cure by large and repeated bleedings, is attended with many inconveniences, (see CXL); and the most effectual and safe method of curing this disease, is, after some general bleedings for taking off, or at least diminishing the phlogistic diathesis, to employ sweating, conducted by the rules laid down CLXVIII, and CLXIX.

CCCCLXVIII.

Opiates, except where they are directed to procure sweat, always prove hurtful in every stage of this disease.

CCCCLXIX.

The Peruvian bark has been supposed a remedy in some cases of this disease ; but we have seldom found it useful, and, in some cases, hurtful. It appears to me to be fit in those cases only, in which the phlogistic diathesis is already much abated ; and where at the same time the exacerbations of the disease
are

are manifestly periodical, with considerable remissions interposed.

CCCCLXX.

Calomel, and some other preparations of mercury, have been recommended in the acute rheumatism; but I believe they are useful only in cases of the chronic kind, or at least in cases approaching to the nature of these.

CCCCLXXI.

Having now treated fully of the cure of the acute rheumatism, I proceed to treat of the cure of the chronic, which is so frequently a sequel of the former.

CCCCLXXII.

The phenomena of the purely chronic rheumatism, mentioned in CCCCXXXIX, and CCCCXL, lead me to conclude, that its proximate cause is an atony, both of the blood vessels and of the muscular fibres of the part affected, together with a degree of rigidity and contraction in the latter, such as frequently attends them in a state of atony.

CCCCLXXIII.

Upon this view of the proximate cause, the general indication of cure must be to restore
the

the activity and vigour of the vital principle in the part ; and the remedies for this disease, which experience has approved of, are chiefly such as are manifestly suited to the indication proposed.

CCCCLXXIV.

These remedies are either external or internal.

The external are, The supporting the heat of the part, by keeping it constantly covered with flannel ; the increasing the heat of the part by external heat, applied either in a dry or in a humid form ; the diligent use of the flesh brush, or other means of friction ; the application of electricity in sparks or shocks ; the application of cold water by affusion or immersion ; the application of essential oils of the most warm and penetrating kind ; the application of salt brine ; and, lastly, the employment of exercise, either of the part itself, so far as it can easily bear it ; or of the whole body, by riding, or other mode of gestation.

CCCCLXXV.

The internal remedies are, 1. Large doses of essential oil drawn from resinous substances, such as turpentine ; 2. Substances containing such oils, as guaiac ; 3. Volatile alkaline salts ; 4. These, or other medicines directed to procure sweat, (CLXIX) ; and lastly, Calomel,
or

or other preparation of mercury, in small doses, continued for some time.

CCCCLXXVI.

These (CCCCLXIII, CCCCLXIV) are the remedies successfully employed in the purely chronic rheumatism; and there are still others recommended; as bleeding, general and topical; burning; blistering; and issues: But these appear to me to be chiefly, perhaps only, useful when the disease still partakes of the nature of acute rheumatism.

C H A P. XIII.

OF THE TOOTHACH OR ODONTAL-
GIA.

CCCCLXXVII.

I HAVE formerly considered this disease as a species of Rheumatism, to be treated upon the same principles as those delivered in the preceding chapter ; but now, from more attentive consideration, I am led to consider the toothach as a distinct disease. Whilst the most of what has been delivered in the last chapter proceeds upon the supposition that the rheumatism depends upon a certain state of the blood vessels and of the motion of the blood in them, without this being produced by the irritation of any acrid matter applied ; I judge, that in the toothach, though there are often the same circumstances in the state of the blood vessels as in the cases of rheumatism, these circumstances in toothach always arise from the application of an acrid matter to the nerves of the teeth.

CCCCLXXVIII.

CCCCLXXVIII.

This disease is often no other than a pain felt in a particular tooth, without any inflammatory affection being at the same time communicated to the neighbouring parts. This, however, is rarely the case ; and for the most part, together with the pain of the tooth, there is some degree of pain and of inflammatory affection communicated to the neighbouring parts, sometimes to the whole of those on the same side of the head with the affected tooth.

CCCCLXXIX.

This inflammatory affection seems to me to be always an affection of muscles and of the membranous parts connected with these, without any tendency to suppuration ; and such an affection, as is excited by cold in similar parts elsewhere. It is from these circumstances that I conclude the affection to be of the rheumatic kind.

CCCCLXXX.

It is possible that the muscles and membranes of the jaw may be affected by the same causes which produce the rheumatism in other parts ; and it is also possible, that a rheumatic diathesis at first produced by irritation, may subsist in the muscles and mem-

branes of the jaw, so that the inflammatory affection may be renewed by certain causes without any new application of acrid matter : But I am persuaded that either of these occurrences are very rare, and I have never been able to ascertain any cases of toothach to be of these kinds. I consider it, therefore, as highly probable that this rheumatic affection of the jaws which we name toothach, is always dependent upon some immediate application of acrid matter to the nerves of the teeth.

CCCCLXXI.

It is however to be observed, that this application of acrid matter does not always excite a pain in the tooth itself, or an inflammatory affection of the neighbouring parts ; but that it very often operates by producing a diathesis only ; so that cold applied to the neighbouring parts does excite both a pain in the tooth, and an inflammatory affection of the neighbouring parts which did not appear before.

There seems to be also certain states of the body, which operate upon the same diathesis, so as to produce toothach. Such seems to be the case of pregnant women, who are more liable to toothach than other women. There are probably also some cases of increased irritability which render persons more subject to toothach. Thus women are more liable to
the

the disease than men, and particularly women liable to hysterick affections.

CCCCLXXXII.

The acrid matter producing this disease seems to be generated first in the hard substances of the teeth ; and as it often appears first upon the external surface of these, it might be suspected to arise from the application of external matters to the teeth : But as the production of this acrimony is often begun in the internal cavity of the teeth, where the operation of external matters cannot be suspected, and as even when it begins upon the external parts of the teeth, the operation of the cause is at first in a small portion of the teeth only, that it is difficult to suppose that any matter externally applied could act in such a partial manner ; so it is presumed that the acrid matter occasioning the toothach is produced by some vice originating in the substance of the tooth itself. When it begins upon the external surface, it is on the enamel ; but upon the internal surface, it must be in the bony part. From what causes it arises in either of these substances, I do not at all know ; but I suspect that it often arises from some more general fault in the fluids of the body. The frequent use of mercury, especially when thrown much upon the mouth, and the state of the fluids in scurvy, seem both of them to give a disposition to a caries in the teeth ; and

it is possible that some other acrimonious states of the fluids may have the same effect.

CCCCLXXXIII.

A caries in some part of the teeth, whether arising upon their internal surface or upon their external, proceeding so far as to reach the nerves in the cavity of the teeth, is pretty manifestly the cause of toothach, and of the first attacks of it ; but when the cavity of the teeth has been opened, so that the external air or other matters can reach that cavity, these are often the exciting causes of toothach, and serve to prove in general, that acrid matters applied to the nerves occasion the disease.

CCCCLXXXIV.

What is the nature of the matter produced in the caries of the teeth, I do not understand, nor have I found any proper corrector of it ; but I presume it to be of the putrid kind, as it often taints the breath with a fetid odour.

CCCCLXXXV.

In the cure of this disease, a long experience has shown, that the extraction of the carious tooth proves the most effectual, and very often the only effectual, remedy of the disease. But as in some cases this extraction is not proper, and as in many cases it is obstinately

nately avoided, other means of curing the disease, or at least of relieving the pain, have been sought for and much practised.

CCCCLXXXVI.

Among these remedies, those are likely to be the most effectual which entirely destroy the affected nerve, or at least so much of it as is exposed to the action of the acrid matter in the tooth. When an opening is made into the cavity of the tooth, the nerve of it may be destroyed most certainly by the actual cautery, and it may also possibly be done by the application of potential caustics, either of the alkaline or acid kind.

CCCCLXXXVII.

When these remedies cannot be rendered effectual, relief may often be obtained by diminishing the sensibility of the nerve affected, by the application of opium, or of the more acrid aromatic oils, directly to the nerve in the tooth. It appears also, that the sensibility of the affected nerve may often be for some time diminished by the external application of opium to the extremities of those nerves in the skin, which are branches of the same fifth pair of nerves with those of the teeth.

CCCCLXXXVIII.

When the disease consists entirely in a pain of the nerve of the tooth, without any considerable affection communicated to the neighbouring parts, the remedies already mentioned are those especially to be employed ; but when the disease consists very much in an inflammatory affection of the muscles and membranes of the jaw, and when at the same time there is little or no access for the abovementioned remedies to the affected nerve, other measures are to be employed for relieving the disease.

CCCCLXXXIX.

If the disease be attended with any general phlogistic diathesis of the system, or with any considerable degree of pyrexia, a general bleeding may be useful in relieving the disease ; but these circumstances occur very rarely, and the disease is for the most part a purely topical affection ; in which, as I observed before, a general bleeding is of very little service. As this disease, however, is a topical inflammation, it might be supposed that topical bleedings would be very useful, and sometimes they are so ; but it is seldom that their effects are either considerable or permanent. The reasons of this I take to be, that the disease does not consist in an affection of the blood vessels alone,

alone, as in the ordinary cases of rheumatism ; but in a peculiar affection of the fibres both of the muscles and of the vessels of the part induced by irritation. The inefficacy of topical bleedings is with me a proof of the disease being of the latter kind.

CCCCXC.

The remedies therefore necessary to give relief in this disease, are those which take off the spasm of the vessels, and especially of the muscles and membranes affected. Such are blistering, brought as near to the part affected as can be conveniently done ; and such are also increased excretions excited in the neighbouring parts, as of the saliva and mucus of the mouth by the use of acrid masticatories. It is often sufficient to excite a strong sensation in the neighbouring parts ; as by eau de luce, spirit of lavender, or Hungary water snuffed up the nostrils ; or by the vitriolic æther properly applied to the cheek. It is upon the same footing that I suppose brandy or other ardent spirit held in the mouth is often of service.

CCCCXCI.

There are cases of toothach in which it does not appear that the disease arises from an acrid matter immediately applied to the nerve of a tooth ; but from the external application

of cold, or some other causes immediately applied to the muscles and membranes of the jaw ; and which therefore seem to require some remedies different from those above-mentioned. But in all such cases, it is to be suspected, that the effects of cold or of other such causes are owing to a diathesis produced by an acrid matter applied to the nerve of a tooth, and continuing in some measure to act there ; and we have accordingly often found, that the action of those external causes were to be obviated only by the extraction of the tooth from which the diathesis had arisen.

C H A P. XIV.

O F T H E G O U T.

CCCCXCII.

THE Gout, not only as it occurs in different persons, but even as it occurs in the same person at different times, is a disease of such various appearance, that it is difficult to render the history of it complete and exact, or to give a character of it that will universally apply. However, I shall endeavour to describe the disease as it most commonly appears, and to mark the varieties of it as well as I can. From such a history I expect that a general character may be given; and such I think is the following, as given in the last edition of our Nosology:

GEN. XXIII. PODAGRA.

Morbus hæreditarius, oriens sine causa externa evidente, sed præeunte plerumque ventriculi affectione insolita; pyrexia; dolor ad articulum et plerumque pedis pollici, certe pedum et manuum juncturis, potissimum infestus;

festus ; per intervalla revertens, et sæpe cum ventriculi et internarum partium affectionibus alternans.

CCCCXCIII.

The gout is generally a hereditary disease : But some persons, without hereditary disposition, seem to acquire it ; and, in some, a hereditary disposition may be counteracted by various causes. These circumstances may seem to give exceptions to our general position ; but the facts directly supporting it are very numerous.

CCCCXCIV.

This disease attacks especially the male sex ; but it sometimes, though more rarely, attacks also the female. The females liable to it are those of the more robust and full habits ; and it very often happens to such long before the menstrual evacuation has ceased. I have found it occurring in several females, whose menstrual evacuations were more abundant than usual.

CCCCXCV.

This disease seldom attacks eunuchs ; and, when it does, they seem to be those who happen to be of a robust habit, to lead an indolent life, and to live very full.

CCCCXCVI.

CCCCXCVI.

The gout attacks especially men of robust and large bodies, men of large heads, of full and corpulent habits, and men whose skins are covered with a thicker *rete mucosum*, which gives a coarser surface.

CCCCXCVII.

If, with the ancients, we might ascertain, by certain terms, the temperaments of men, I would say that the gout attacks especially men of a *cholericofanguine* temperament, and that it very seldom attacks the purely sanguine or melancholic. It is, however, very difficult to treat this matter with due precision.

CCCCXCVIII.

The gout seldom attacks persons employed in constant bodily labour, or persons who live much upon vegetable aliment. It is also said to be less frequent among those people who make no use of wine or other fermented liquors.

CCCCXCIX.

The gout does not commonly attack men, till after the age of five and thirty; and generally not till a still later period. There are indeed

deed instances of the gout occurring more early ; but these are few in comparison of the numbers which agree with what we have given as the general rule. When the disease does appear early in life, it seems to be in those in whom the hereditary disposition is very strong, and to whom the remote causes to be hereafter mentioned have been applied in a considerable degree.

D.

As the gout is a hereditary disease, and affects especially men of a particular habit, its remote causes may be considered as predisponent and occasional.

DI.

The predisponent cause, so far as expressed by external appearances, or by the general temperament, we have already marked ; and physicians have been very confident in assigning the occasional causes : But, in a disease depending so much upon a predisposition, the assigning occasional causes must be uncertain ; as, in the predisposed, the occasional causes may not always appear, and in persons not predisposed, they may appear without effect. This uncertainty must particularly affect the case of the gout ; but I shall offer what appears to me most probable on the subject.

DII.

DII.

The occasional causes of the gout seem to be of two kinds. First, those which induce a plethoric state of the body. Secondly, those which, in plethoric habits, induce a state of debility.

DIII.

Of the first kind are a sedentary indolent manner of life, a full diet of animal food, and the large use of wine or of other fermented liquors. These circumstances commonly precede the disease ; and if there should be any doubt of their power of producing it, the fact, however, will be rendered sufficiently probable by what has been observed in CCCCXCVIII.

DIV.

Of the second kind of occasional causes which induce debility are, excess in venery ; intemperance in the use of intoxicating liquors ; indigestion, produced either by the quantity or quality of aliments ; much application to study or business ; night watching ; excessive evacuations ; the ceasing of usual labour ; the sudden change from a very full to a very spare diet ; the large use of acids and acescents ; and, lastly, cold applied to the lower extremities.

DV.

DV.

The first (DIII) seem to act by increasing the predisposition. The last (DIV) are commonly the exciting causes, both of the first attacks, and of the repetitions of the disease.

DVI.

It is an inflammatory affection of some of the joints which especially constitutes what we call a paroxysm of the gout. This sometimes comes on suddenly without any warning, but is generally preceded by several symptoms; such as the ceasing of a sweating which the feet had been commonly affected with before; an unusual coldness of the feet and legs; a frequent numbness, alternating with a sense of prickling along the whole of the lower extremities; frequent cramps of the muscles of the legs; and an unusual turgescence of the veins.

DVII.

While these symptoms take place in the lower extremities, the whole body is affected with some degree of torpor and languor, and the functions of the stomach in particular are more or less disturbed. The appetite is diminished; and flatulency, or other symptoms of indigestion, are felt. These symptoms, and those of DVI, take place for several days, sometimes

sometimes for a week or two, before a paroxysm comes on ; but commonly, upon the day immediately preceding it, the appetite becomes greater than usual.

DVIII.

The circumstances of paroxysms are the following : They come on most commonly in the spring, and sooner or later according as the vernal heat succeeds sooner or later to the winter's cold ; and perhaps sooner or later also according as the body may happen to be more or less exposed to vicissitudes of heat and cold.

DIX.

The attacks are sometimes felt first in the evening, but more commonly about two or three o'clock of the morning. The paroxysm begins with a pain affecting one foot, most commonly in the ball or first joint of the great toe, but sometimes in other parts of the foot. With the coming on of this pain, there is commonly more or less of a cold shivering, which, as the pain increases, gradually ceases, and is succeeded by a hot stage of pyrexia, which continues for the same time with the pain itself. From the first attack, the pain becomes by degrees more violent, and continues in this state with great restlessness of the whole body till next midnight, after which it gradually remits ; and, after it has continued for twenty
four

four hours from the commencement of the first attack, it commonly ceases very entirely, and, with the coming on of a gentle sweat, allows the patient to fall asleep. The patient, upon coming out of this sleep in the morning, finds the pained part affected with some redness and swelling, which, after having continued for some days, gradually abate.

DX.

When a paroxysm has thus come on, although the violent pain after twenty four hours be considerably abated, the patient is not entirely relieved from it. For some days he has every evening a return of more considerable pain and pyrexia, and which continue with more or less violence till morning. After continuing in this manner for several days, the disease sometimes goes entirely off, not to return till after a long interval.

DXI.

When the disease, after having thus remained for some time in a joint, ceases very entirely, it generally leaves the person in very perfect health, enjoying greater ease and alacrity in the functions of both body and mind, than he had for a long time before experienced.

DXII.

DXII.

At the beginning of the disease, the returns of it are sometimes only once in three or four years ; but, after some time, the intervals become shorter, and the attacks become annual ; afterwards they come twice each year, and at length recur several times during the whole course of autumn, winter, and spring ; and as it happens, that, when the fits are frequent, the paroxysms become also longer, so, in the advanced stage of the disease, the patient is hardly ever tolerably free from it, except perhaps for two or three months in summer.

DXIII.

The progress of the disease is also marked by the parts which it affects. At first, it commonly affects one foot only, afterwards every paroxysm affects both feet, the one after the other ; and, as the disease continues to recur, it not only affects both feet at once, but after having ceased in the foot which was secondly attacked, returns again into the foot first affected, and perhaps a second time also into the other. Its changes of place are not only from one foot to the other, but also from the feet into other joints, especially those of the upper and lower extremities ; so that there is hardly a joint of the body that is not, on one occasion or other, affected. It sometimes affects two
different

different joints at the same time ; but more commonly it is severe in a single joint only, and passes successively from one joint to another ; so that the patient's affliction is often protracted for a long time.

DXIV.

When the disease has often returned, and the paroxysms have become very frequent, the pains are commonly less violent than they were at first ; but the patient is more affected with sickness, and the other symptoms of the atonic gout, which shall be hereafter mentioned.

DXV.

After the first paroxysms of the disease, the joints which have been affected are entirely restored to their former suppleness and strength ; but after the disease has recurred very often, the joints affected do neither so suddenly nor so entirely recover their former state, but continue weak and stiff ; and these effects at length proceed to such a degree, that the joints lose their motion altogether.

DXVI.

In many persons, but not in all, after the disease has frequently recurred, concretions of a chalky nature are formed upon the outside
of

of the joints, and for the most part immediately under the skin. The matter seems to be deposited at first in a fluid form, but afterwards becomes dry and firm. In their dry state, these concretions are a friable earthy substance, very entirely soluble in acids. After they have been formed, they contribute, with other circumstances, to destroy the motion of the joint.

DXVII.

In most persons who have laboured under the gout for many years, a nephritic affection comes on, and discovers itself by all the symptoms which usually attend calculous concretions in the kidneys, and which we shall have occasion to describe in another place. All that is necessary to be observed here is, that the nephritic affection alternates with paroxysms of the gout ; and that the two affections, the nephritic and the gouty, are hardly ever present at the same time. This also may be observed, that children of gouty or nephritic parents, commonly inherit one or other of these diseases ; but which ever may have been the principal disease of the parent, some of the children have the one, and some the other. In some of them, the nephritic affection occurs alone, without any gout supervening ; and this happens to be frequently the case of the female offspring of gouty parents.

DXVIII.

DXVIII.

In the whole of the history already given, I have described the most common form of the disease; and which therefore, however diversified in the manner I have said, may be still called the regular state of the gout. Upon occasion, however, the disease assumes different appearances; but as I suppose the disease to depend always upon a certain diathesis or disposition of the system; so every appearance which we can perceive to depend upon that same disposition, I still consider as a symptom and case of the gout. The principal circumstance in what we term the *Regular Gout*, is the inflammatory affection of the joints; and whatever symptoms we can perceive to be connected with, or to depend upon, the disposition which produces that inflammatory affection, but without its taking place, or being present at the same time, we name the *Irregular Gout*.

DXIX.

Of such irregular gout there are three different states; which I name the *atonic*, the *retrocedent*, and the *misplaced* gout.

DXX.

The atonic state is when the gouty diathesis prevails in the system, but, from certain

tain causes, does not produce the inflammatory affection of the joints. In this case, the morbid symptoms which appear are chiefly affections of the stomach; such as loss of appetite, indigestion, and its various circumstances of sickness, nausea, vomiting, flatulency, acid eructations, and pains in the region of the stomach. These symptoms are frequently accompanied with pains and cramps in several parts of the trunk, and the upper extremities of the body, which are relieved by the discharge of wind from the stomach. Together with these affections of the stomach, there commonly occurs a costiveness; but sometimes a looseness with colic pains. These affections of the alimentary canal are often attended with all the symptoms of hypochondriasis; as dejection of mind, a constant and anxious attention to the slightest feelings, an imaginary aggravation of these, and an apprehension of danger from them.

In the same atonic gout, the viscera of the thorax also are sometimes affected, and palpitations, faintings, and asthma, occur.

In the head also occur, headaches, giddiness, apoplectic and paralytic affections.

DXXI.

When the several symptoms now mentioned occur in habits having the marks of a gouty disposition, this may be suspected to have laid the foundation of them; and especially when
either,

either, in such habits, a manifest tendency to the inflammatory affection has formerly appeared ; or when the symptoms mentioned are intermixed with, and are not relieved by, some degree of the inflammatory gout. In such cases there can be no doubt of considering the whole as a state of the gout.

DXXII.

Another state of the disease I name the *retrocedent* gout. This occurs when an inflammatory state of the joints has, in the usual manner, come on, but which, without arising to the ordinary degree of pain and inflammation, or, at least, without these continuing for the usual time, and receding gradually in the usual manner, they suddenly and entirely cease, while some internal part becomes affected. The internal part most commonly affected is the stomach, which is then affected with anxiety, sickness, vomiting, or violent pain ; but sometimes the internal part is the heart, which gives occasion to a syncope ; sometimes it is the lungs which are affected with asthma ; and sometimes it is the head, giving occasion to apoplexy or palsy. In all these cases, there can be no doubt of the symptoms being all a part of the same disease, however different the affection may seem to be in the parts which it attacks.

DXXIII.

DXXIII.

The third state of irregular gout, which we name the *misplaced*, is when the gouty diathesis, instead of producing the inflammatory affection of the joints, produces an inflammatory affection of some internal part, and which appears from the same symptoms that attend the inflammation of those parts arising from other causes.

Whether the gouty diathesis does ever produce such inflammation of the internal parts, without having first produced it in the joints, or if the inflammation of the internal part be always a translation from the joints previously affected, I dare not determine ; but, even supposing the latter to be always the case, I think the difference of the affection of the internal part must still distinguish the misplaced from what I have named the *retrocedent* gout.

DXXIV.

What internal parts may be affected by the misplaced gout, I cannot precisely say, because I have never met with any cases of the misplaced gout in my practice ; and I find no cases of it distinctly marked by practical writers, except that of a pneumonic inflammation.

DXXV.

There are two cases of a translated gout ; the one of which is an affection of the neck of the bladder, producing pain, strangury, and a catarrhus vesicæ : The other is an affection of the rectum, sometimes by pain alone in that part, and sometimes by hemorrhoidal swellings there. In gouty persons, I have known such affections alternate with inflammatory affections of the joints : But whether to refer those affections to the retrocedent, or to the misplaced gout, I will not presume to determine.

DXXVI.

From the history which I have now delivered of the gout, I think it may be discerned under all its various appearances. It is, however, commonly supposed, that there are cases in which it may be difficult to distinguish gout from rheumatism, and it is possible there may be such cases ; but, for the most part, the two diseases may be distinguished with great certainty by observing the predisposition, the antecedents, the parts affected, the recurrences of the disease, and its connexion with the other parts of the system ; which circumstances, for the most part, appear very differently in the two diseases.

DXXVII.

DXXVII.

With respect to the gout, our next business is to investigate its proximate cause ; which must be a difficult task, and I attempt it with some diffidence.

DXXVIII.

Upon this subject, the opinion which has generally prevailed is, that the gout depends upon a certain morbid matter, always present in the body ; and that this matter, by certain causes, thrown upon the joints or other parts, produces the several phenomena of the disease.

DXXIX.

This doctrine, however ancient and general, appears to me very doubtful ; for,

First, there is no direct evidence of any morbid matter being present in persons disposed to the gout. There are no experiments or observations which show that the blood, or other humours of gouty persons, are in any respect different from those of other persons. Previous to attacks of the gout, there appear no marks of any morbid state of the fluids ; for the disease generally attacks those persons who have enjoyed the most perfect health, and appear to be in that state when the disease comes on. At a certain period of the disease, a peculiar

culiar matter indeed appears in gouty persons, (DXVI) ; but this, which does not appear in every instance, and which appears only after the disease has subsisted for a long time, seems manifestly to be the effect, not the cause, of the disease. Further, though there be certain acrids which, taken into the body, seem to excite the gout (DIV), it is probable that these acrids operate otherwise in exciting the disease, than by affording the material cause of it. In general, therefore, there is no proof of any morbid matter being the cause of the gout.

Secondly, The suppositions concerning the particular nature of the matter producing the gout, have been so various and so contradictory to each other, as to allow us to conclude, that there is truly no proof of the existence of any of them. With respect to many of these suppositions, they are so inconsistent with chemical philosophy, and with the laws of the animal economy, that they must be entirely rejected.

Thirdly, The supposition of a morbid matter being the cause of the gout, is not consistent with the phenomena of the disease, particularly with its frequent and sudden translations from one part to another.

Fourthly, The supposition is further rendered improbable by this, that, if a morbid matter did exist, its operation should be similar in the several parts which it attacks ; whereas it seems to be very different, being stimulant, and exciting inflammation in the joints, but
sedative

sedative and destroying the tone in the stomach : Which, upon the supposition of particular matter acting in both cases, is not to be explained by any difference in the part affected.

Fifthly, Some facts, alleged in proof of a morbid matter, are not sufficiently confirmed, such as those which would prove the disease to be contagious. There is, however, no proper evidence of this, the facts given being not only few, but exceptionable ; and the negative observations are innumerable.

Sixthly, Some arguments brought in favour of a morbid matter, are founded upon a mistaken explanation. The disease has been supposed to depend upon a morbid matter, because it is hereditary : But the inference is not just ; for most hereditary diseases do not depend upon any morbid matter, but upon a particular conformation of the structure of the body, transmitted from the parent to the offspring ; and this last appears to be particularly the case in the gout. It may be also observed, that hereditary diseases, depending upon a morbid matter, always appear much more early in life than the gout commonly does.

Seventhly, The supposition of a morbid matter being the cause of the gout, has been hitherto useless, as it has not suggested any successful method of cure. Particular suppositions have often corrupted the practice, and have frequently led from those views

which might be useful, and from that practice which experience had approved. Further, though the supposition of a morbid matter has been generally received, it has been as generally neglected in practice. When the gout has affected the stomach, nobody thinks of correcting the matter supposed to be present there, but merely of restoring the tone of the moving fibres.

Eighthly, The supposition of a morbid matter is quite superfluous ; for it explains nothing, without supposing that matter to produce a change in the state of the moving powers ; and a change in the state of the moving powers, produced by other causes, explains every circumstance, without the supposition of a morbid matter ; and, to this purpose, it may be observed, that many of the causes (DIV) exciting the gout, do not operate upon the state of the fluids, but directly and solely upon that of the moving powers.

Lastly, The supposition of a morbid matter is also superfluous ; because, without any such supposition, I think the disease can be explained in a manner more consistent with its phenomena, with the laws of the animal economy, and with the method of cure which experience has approved.

I now proceed to give this explanation ; but, before entering upon it, I must premise some general observations.

DXXX.

The first observation is, that the gout is a disease of the whole system, or depends upon a certain general conformation and state of the body; which manifestly appears from the facts mentioned from CCCCXCIV, to CCCCXCVII. But the general state of the system depends chiefly upon the state of its primary moving powers; and therefore the gout may be supposed to be chiefly an affection of these.

DXXXI.

My second observation is, that the gout is manifestly an affection of the nervous system; in which the primary moving powers of the whole system are lodged. The occasional or exciting causes (DIV) are almost all such as act directly upon the nerves and nervous system; and the greater part of the symptoms of the atonic or retrocedent gout are manifestly affections of the same system. (DXX, and DXXII.) This leads us to seek for an explanation of the whole of the disease in the laws of the nervous system, and particularly in the changes which may happen in the balance of its several parts.

DXXXII.

My third observation is, that the stomach, which has so universal a consent with the rest of the system, is the internal part that is the most frequently, and often very considerably, affected by the gout. The paroxysms of the disease are commonly preceded by an affection of the stomach (DVII); many of the exciting causes (DIV) act first upon the stomach; and the symptoms of the atonic and retrocedent gout (DXX, DXXXII) are most commonly and chiefly affections of the same organ. This observation leads us to remark, that there is a balance subsisting between the state of the internal and that of the external parts; and, in particular, that the state of the stomach is connected with that of the external parts, (XLIV); so that the state of tone in the one may be communicated to the other.

DXXXIII.

These observations being premised, I shall now offer the following pathology of the gout.

In some persons, there is a certain vigorous and plethoric state of the system (CCCCXCVI) which, at a certain period of life, is liable to a loss of tone in the extremities (CCCCXCIX, DVI.) This is in some measure communicated to the whole system, but appears more especially in the functions of the stomach (DVII.)

(DVII.) When this loss of tone occurs while the energy of the brain still retains its vigour, the *vis medicatrix naturæ* is excited to restore the tone of the parts ; and accomplishes it by exciting an inflammatory affection in some part of the extremities. When this has subsisted for some days, the tone of the extremities, and of the whole system, are restored, and the patient returns to his ordinary state of health (DXI.)

DXXXIV.

This is the course of things, in the ordinary form of the disease, which we name the *regular* gout ; but there are circumstances of the body, in which this course is interrupted or varied. Thus when the atony (DVI, DVII) has taken place, if the reaction (DIX) do not succeed, the atony continues in the stomach, or perhaps in other internal parts, and produces that state which we have, for reasons now obvious, named the *atonic* gout.

DXXXV.

A second case of variation in the course of the gout is, when, to the atony, the reaction, and inflammation have to a certain degree succeeded ; but, from causes either internal or external, the tone of the extremities, and perhaps of the whole system, is weakened ; so that the inflammatory state, before it had ei-

ther proceeded to the degree, or continued for the time, requisite for restoring the tone of the system, suddenly and entirely ceases. Hence the stomach, and other internal parts, relapse into the state of atony ; and perhaps have this increased by the atony communicated from the extremities : All which appears in what we have termed the *retrocedent* gout.

DXXXVI.

A third case of variation from the ordinary course of the gout, is, when, to the atony usually preceding, an inflammatory reaction fully succeeds ; but has its usual determination to the joints by some circumstances prevented ; and is therefore directed to an internal part, where it produces an inflammatory affection, and that state of things which we have named the *misplaced* gout.

DXXXVII.

We have thus offered an explanation of the circumstances of the system in the several states of the gout ; and this explanation we suppose to be consistent with the phenomena of the disease, and with the laws of the animal economy. There are indeed, with respect to the theory of the disease, several questions which might be put, to which we have not given any answer. But, though perhaps we could give
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an answer to many of these questions, it does not here appear necessary ; as at present we intend only to establish such general facts with regard to this disease, as may lay a foundation for the cure of it, so far as experience has enabled us to prosecute it. Proceeding, therefore, upon the several parts of the pathology given, as so many matters of fact, I shall now consider what may be attempted towards the cure of the disease.

DXXXVIII.

In entering upon this, I must observe, in the first place, that a cure has been commonly thought impossible ; and we acknowledge it to be very probable, that the gout, as a disease of the whole habit, and very often depending upon original conformation, cannot be cured by medicines, the effects of which are always very transitory, and seldom extend to the producing any considerable change of the whole habit.

DXXXIX.

It would perhaps have been happy for gouty persons, if this opinion had been implicitly received by them ; as it would have prevented their having been so often the dupes of selfinterested pretenders, who have either amused them with inert medicines, or have rashly employed those of the most pernicious tendency.

tendency. I am much disposed to believe the impossibility of a cure of the gout by medicines; and more certainly still incline to think, that whatever may be the possible power of medicines, yet no medicine for curing the gout has hitherto been found. Although almost every age has presented a new remedy, yet all hitherto offered have very soon been either neglected as useless, or condemned as pernicious.

DXL.

Though unwilling to admit the power of medicines, yet I contend, that a great deal can be done towards the cure of the gout by a regimen: And from what has been observed (CCCCXCVIII), I am firmly persuaded, that any man who, early in life, will enter upon the constant practice of bodily labour, and of abstinence from animal food, will be preserved entirely from the disease.

Whether there be any other means of radically curing the gout, I am not ready to determine. There are histories of cases of the gout, in which it is said, that by great emotions of mind, by wounds, and by other accidents, the symptoms have been suddenly relieved, and never again returned; but how far these accidental cures might be imitated by art, or would succeed in other cases, is at least extremely uncertain.

DXLI.

The practices proper and necessary in the treatment of the gout, are to be considered under two heads ; *first*, As they are to be employed in the intervals of paroxysms ; or, *secondly*, As during the time of these.

DXLII.

In the intervals of paroxysms, the indications are, to prevent the return of paroxysms, or at least to render them less frequent, and more moderate. During the time of paroxysms, the indications are, to moderate the violence, and shorten the duration of them as much as can be done with safety.

DXLIII.

It has been already observed, that the gout may be entirely prevented by constant bodily exercise, and by a low diet ; and I am of opinion, that this prevention may take place even in persons who have a hereditary disposition to the disease. I must add here, that, even when the disposition has discovered itself by several paroxysms of inflammatory gout, I am persuaded that labour and abstinence will absolutely prevent any returns of it for the rest of life. These, therefore, are the means of answering the first indication to be pursued in
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the intervals of paroxysms ; and I must here offer some remarks upon the proper use of these remedies.

DXLIV.

Exercise, in persons disposed to the gout, is directed to two purposes : One of these is the strengthening of the tone of the extreme vessels ; and the other, the guarding against a plethoric state. For the former, if exercise be employed early in life, and before intemperance has weakened the body, a very moderate degree of it will answer the purpose ; and for the latter, if abstinence be at the same time observed, little exercise will be necessary.

DXLV.

With respect to exercise, this in general is to be observed, that it should never be violent ; for, if violent, it cannot be long continued, and must always endanger the bringing on an atony in proportion to the violence of the preceding exercise.

DXLVI.

It is also to be observed, that the exercise of gestation, though considerable and constant, if it be entirely without bodily exercise, will not answer the purpose in preventing the gout. For this end, therefore, the exercise must be
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in some measure that of the body; and must be moderate, but at the same time constant, and continued through life.

DXLVII.

In every case and circumstance of the gout in which the patient retains the use of his limbs, bodily exercise, in the intervals of paroxysms, will always be useful; and, in the beginning of the disease, when the disposition to it is not yet strong, exercise may prevent a paroxysm which otherwise might have come on. In more advanced states of the disease, however, when there is some disposition to a paroxysm, much walking will bring it on; either as it weakens the tone of the lower extremities, or as it excites an inflammatory disposition in them; and it is probable, that in the same manner strains or contusions often bring on a paroxysm of the gout.

DXLVIII.

Abstinence, the other part of our regimen (DXL) for preventing the gout, is of more difficult application. If an abstinence from animal food be entered upon early in life, while the vigour of the system is yet entire, we have no doubt of its being both safe and effectual; but if the motive for this diet shall not have occurred till the constitution shall have been broken by intemperance, or by the decline

decline of life, a low diet may then endanger the bringing on an atonic state.

DXLIX.

Further, if a low diet be entered upon only in the decline of life, and be at the same time a very great change in the former manner of living, the withdrawing of an accustomed stimulus of the system may readily throw this into an atonic state.

DL.

The safety of an abstemious course may be greater or less according to the management of it. It is animal food which especially disposes to the plethoric and inflammatory state, and that food is to be therefore especially avoided ; but, on the other hand, it is vegetable aliment of the lowest quality that is in danger of weakening the system too much, by not affording sufficient nourishment ; and more particularly of weakening the tone of the stomach by its acescency. It is therefore a diet of a middle nature that is to be chosen ; and milk is precisely of this kind, as containing both animal and vegetable matter.

As approaching to the nature of milk, and as being a vegetable matter containing the greatest portion of nourishment, the farinaceous feeds are next to be chosen, and are the food most proper to be joined with milk.

DLI.

DLI.

With respect to drink, fermented liquors are useful only when they are joined with animal food, and that by their acescency ; and their stimulus is only necessary from custom. When, therefore, animal food is to be avoided, fermented liquors are unnecessary ; and, by increasing the acescency of vegetables, these liquors may be hurtful. The stimulus of fermented or spirituous liquors, is not necessary to the young and vigorous ; and, when much employed, impairs the tone of the system. These liquors, therefore, are to be avoided, except so far as custom and the declining state of the system may have rendered them necessary. For preventing or moderating the regular gout, water is the only proper drink.

DLII.

With respect to an abstemious course, it has been supposed, that an abstinence from animal food and fermented liquors, or the living upon milk and farinacea alone for the space of one year, might be sufficient for a radical cure of the gout ; and it is possible, that, at a certain period of life, in certain circumstances of the constitution, such a measure might answer the purpose. But this is very doubtful ; and it is more probable that the abstinence must, in a great measure, be continued, and the

the milk diet be persisted in, for the rest of life. It is well known, that several persons who had entered on an abstemious course, and had been thereby delivered from the gout, have, however, upon returning to their former manner of full living, had the disease return upon them with as much violence as before, or in a more irregular and more dangerous form.

DLIII.

It has been alleged, that, for preventing the return of the gout, bloodletting, or scarifications of the feet, frequently repeated, and at stated times, may be practised with advantage; but of this I have had no experience.

DLIV.

Exercise and abstinence are the means of avoiding the plethoric state which gives the disposition to the gout; and are therefore the means proposed for preventing paroxysms, or at least for rendering them less frequent, and more moderate. But many circumstances prevent the steadiness necessary in pursuing these measures; and therefore, in such cases, unless great care be taken to avoid the exciting causes, the disease may frequently return; and, in many cases, the preventing of paroxysms is chiefly to be obtained by avoiding those exciting causes enumerated in DIV. The conduct necessary for avoiding them, will be sufficiently

ſufficiently obvious to perſons acquainted with the doctrines of the Hygieine, which I ſuppoſe to have been delivered in another place.

DLV.

A due attention in avoiding thoſe ſeveral cauſes (DIII, DIV) will certainly prevent fits of the gout ; and the taking care that the exciting cauſes be never applied in a great degree, will certainly render fits more moderate when they do come on. But, upon the whole, it will appear, that a ſtrict attention to the whole conduct of life, is in this matter neceſſary ; and therefore, when the prediſpoſition has taken place, it will be extremely difficult to avoid the diſeaſe.

DLVI.

I am indeed firmly perſuaded, that, by obviating the prediſpoſition, and by avoiding the exciting cauſes, the gout may be entirely prevented : But as the meaſures neceſſary for this purpoſe will, in moſt caſes, be purſued with difficulty, and even with reluctance, men have been very deſirous to find a medicine which might answer the purpoſe without any reſtraint on their manner of living. To gratify this deſire, phyſicians have propoſed, and, to take advantage of it, empirics have feigned, many remedies, as we have already obſerved. Of what nature ſeveral of theſe remedies have
been,

been, I cannot certainly say ; but, of those which are unknown, we conclude, from their having been only of temporary fame, and from their having soon fallen into neglect, that they have been either inert or pernicious, and therefore I make no inquiry after them ; and shall now remark only upon one or two known remedies for the gout which have been lately in vogue.

DLVII.

One of these is what has been named in England the Portland Powder. This is not a new medicine, but is mentioned by GALEN, and, with some little variation in its composition, has been mentioned by the writers of almost every age since that time. It appears to have been at times in fashion, and to have again fallen into neglect ; and I think that this last has been owing to its having been found to be, in many instances, pernicious. In every instance which I have known of its exhibition for the length of time prescribed, the persons who had taken it were indeed afterwards free from any inflammatory affection of the joints ; but they were affected with many symptoms of the atonic gout ; and all, soon after finishing their course of the medicine, have been attacked with apoplexy, asthma, or dropsy, which proved fatal.

DLVIII.

DLVIII.

Another remedy which has had the appearance of preventing the gout, is an alkali in various forms, such as the fixed alkali both mild and caustic, lime water, soap, and absorbent earths. Since it became common to exhibit these medicines in nephritic and calculous cases, it has often happened that they were given to those who were at the same time subject to the gout; and it has been observed, that, under the use of these medicines, gouty persons have been longer free from the fits of their disease. That, however, the use of these medicines has entirely prevented the returns of gout, I do not know; because I never pushed the use of those medicines for a long time, being apprehensive that the long continued use of them might produce a hurtful change in the state of the fluids.

DLIX.

With respect to preventing the gout, I have only one other remark to offer. As the preventing the gout depends very much on supporting the tone of the stomach, and avoiding indigestion; so costiveness, by occasioning this, is very hurtful to gouty persons. It is therefore necessary for such persons to prevent or remove costiveness, and by a laxative medicine, when needful; but it is at the same time proper,

er, that the medicine employed should be such as may keep the belly regular, without much purging. Aloetics, rhubarb, magnesia alba, or flowers of sulphur, may be employed, as the one or the other may happen to be best suited to particular persons.

DLX.

These are the several measures (from DXLII, to DLIX) to be pursued in the intervals of the paroxysms ; and we are next to mention the measures proper during the time of them.

DLXI.

As during the times of paroxysms the body is in a feverish state, no irritation should then be added to it ; and every part, therefore, of the antiphlogistic regimen, (CXXX, to CXXXIII) except the application of cold, ought to be strictly observed.

Another exception to the general rule may occur when the tone of the stomach is weak, and when the patient has been before much accustomed to the use of strong drink ; for then it may be allowable, and even necessary, to give some animal food, and a little wine.

DLXII.

DLXII.

That no irritation is to be added to the system during the paroxysms of gout, except in the cases mentioned, is entirely agreed upon among physicians : But it is a more difficult matter to determine whether, during the time of paroxysms, any measures may be pursued to moderate the violence of reaction and of inflammation. Dr. Sydenham has given it as his opinion, that the more violent the inflammation and pain, the paroxysms will be the shorter, as well as the interval between the present and next paroxysm longer ; and, if this opinion be admitted as just, it will forbid the use of any remedies which might moderate the inflammation ; which is, to a certain degree, undoubtedly necessary for the health of the body. On the other hand, acute pain presses for relief ; and, although a certain degree of inflammation may seem absolutely necessary, it is not certain but that a moderate degree of it may answer the purpose : And it is even probable, that, in many cases, the violence of inflammation may weaken the tone of the parts, and thereby invite a return of paroxysms. It seems to me to be in this way, that, as the disease advances, the paroxysms become more frequent.

DLXIII.

DLXIII.

From these last considerations, it seems probable, that, during the time of paroxysms, some measures may be taken to moderate the violence of the inflammation and pain ; and particularly, that in first paroxysms, and in the young and vigorous, bloodletting at the arm may be practised with advantage : But I am persuaded, that this practice cannot be repeated often with safety ; because bloodletting not only weakens the tone of the system, but may also contribute to produce plethora. I believe, however, that bleeding by leeches on the foot, and upon the inflamed part, may be practised, and repeated with greater safety ; and I have known instances of its having been practised with safety, to moderate and shorten paroxysms ; but how far it may be carried, we have not had experience enough to determine.

DLXIV.

Besides bloodletting, and the antiphlogistic regimen, it has been proposed to employ remedies for moderating the inflammatory spasm of the part affected, such as warm bathing and emollient poultices. These have sometimes been employed with advantage and safety ; but at other times, have been found to give occasion to a retrocession of the gout.

DLXV.

DLXV.

Blistering is a very effectual means of relieving and discussing a paroxysm of the gout ; but has also frequently had the effect of rendering it retrocedent.

DLXVI.

The stinging with nettles I consider as analogous to blistering ; and I think it probable that it would be attended with the same danger.

DLXVII.

The burning with moxa, or other substances, I consider as a remedy of the same kind. I have had indeed no evidence of this proving hurtful ; but neither have I had any proper evidence of its having proved a radical cure.

DLXVIII.

Camphire, and some aromatic oils, have the power of allaying the pain, and of removing the inflammation from the part affected ; but these remedies commonly make the inflammation only shift from one part to another, and therefore with the hazard of its falling upon a part where it may be more
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dangerous ; and they have sometimes rendered the gout retrocedent.

DLXIX.

From these reflections (DLXIV. et seq.) it will appear, that some danger must attend every external application to the parts affected during a paroxysm ; and that therefore the common practice of committing the person to patience and flannel alone, is established upon the best foundation.

DLXX.

Opiates give the most certain relief from pain ; but, when given in the beginning of gouty paroxysms, occasion these to return with greater violence. When, however, the paroxysms shall have abated in their violence, but still continue to return, so as to occasion painful and restless nights, opiates may be then given with safety and advantage, especially in the case of persons advanced in life, and who have been often affected with the disease.

DLXXI.

When, after paroxysms have ceased, some swelling and stiffness shall remain in the joints, these symptoms are to be discussed by the diligent use of the flesh brush.

DLXXII.

DLXXII.

Purging, immediately after a paroxysm, will be always employed with the hazard of bringing it on again.

DLXXIII.

I have now finished what has occurred to be said upon the means of preventing and curing the regular gout ; and shall now consider its management when it has become irregular ; of which, as I have observed above, there are three different cases.

DLXXIV.

In the first case, which I have named the Atonic Gout, the cure is to be accomplished by carefully avoiding all debilitating causes ; and by employing, at the same time, the means of strengthening the system in general, and the stomach in particular.

DLXXV.

For the avoiding debilitating causes, I must refer to the doctrines of the Hygieine, as in DLIV.

DLXXVI.

DLXXVI.

For strengthening the system in general, I must recommend frequent exercise on horseback, and moderate walking. Cold bathing also may answer the purpose, and may be safely employed, if it appear to be powerful in stimulating the system, and be not applied when the extremities are threatened with any pain.

For supporting the tone of the system in general, when threatened with atonic gout, some animal food ought to be employed, and the more acescent vegetables ought to be avoided. In the same case, some wine also may be necessary ; but it should be in moderate quantity, and of the least acescent kinds ; and if every kind of wine shall be found to increase the acidity of the stomach, ardent spirits and water must be employed.

DLXXVII.

For strengthening the stomach, bitters and the Peruvian bark may be employed ; but care must be taken that they be not constantly employed for any great length of time. Compare DLVII.

The most effectual medicine for strengthening the stomach is iron, which may be employed under various preparations ; but, to me, the best appears to be the rust in fine powder,

powder, which may be given in very large doses.

For supporting the tone of the stomach, aromatics may be employed ; but should be used with caution, as the frequent and large use of them may have an opposite effect ; and they should therefore be given only in compliance with former habits, or for palliating present symptoms.

When the stomach happens to be liable to indigestion, gentle vomits may be frequently given ; and proper laxatives should be always employed to obviate, or to remove, costiveness.

DLXXVIII.

In the atonic gout, or in persons liable to it, to guard against cold is especially necessary ; and the most certain means of doing this, is, by repairing to a warm climate during the winter season.

DLXXIX.

In the more violent cases of the atonic gout, blistering the lower extremities may be useful ; but that remedy should be avoided when any pain threatens the extremities. In persons liable to the atonic gout, issues may be established in the extremities, as, in some measure, a supplement to the disease.

DLXXX.

DLXXX.

A second case of the irregular gout, is that which I have named the Retrocedent. When this affects the stomach and intestines, relief is to be instantly attempted by the free use of strong wines, joined with aromatics, and given warm ; or if these shall not prove powerful enough, ardent spirits must be employed, and are to be given in a large dose. In moderate attacks, ardent spirits impregnated with garlic, or with asafœtida, may be employed ; or, even without the ardent spirits, a solution of asafœtida with the volatile alkali may answer the purpose. Opiates are often an effectual remedy, and may be joined with aromatics, as in the Electuarium Thebaicum ; or they may be usefully joined with volatile alkali and camphire. Musk has likewise proved useful in this disease.

When the affection of the stomach is accompanied with vomiting, this may be encouraged, by taking draughts of warm wine, at first with water, and afterwards without it ; having at length recourse, if necessary, to some of the remedies above mentioned, and particularly the opiates.

In like manner, if the intestines be affected with diarrhœa, this is to be at first encouraged, by taking plentifully of weak broth ; and when this shall have been done sufficiently, the tumult is to be quieted by opiates.

DLXXXI.

DLXXXI.

When the retrocedent gout shall affect the lungs, and produce asthma, this is to be cured by opiates, by antispasmodics, and, perhaps, by blistering on the breast or back.

DLXXXII.

When the gout, leaving the extremities, shall affect the head, and produce pain, vertigo, apoplexy, or palsy, our resources are very precarious. The most probable means of relief is, blistering the head; and if the gout shall have receded very entirely from the extremities, blisters may be applied to these also. Together with these blisterings, aromatics, and the volatile alkali, may be thrown into the stomach.

DLXXXIII.

The third case of the irregular gout is what I have named the Misplaced; that is, when the inflammatory affection of the gout, instead of falling upon the extremities, falls upon some internal part. In this case, the disease is to be treated by bloodletting, and by such other remedies as would be proper in an idiopathic inflammation of the same parts.

DLXXXIV.

DLXXXIV.

Whether the translation so frequently made from the extremities to the kidneys, is to be considered as an instance of the misplaced gout, seems, as we have said before, uncertain ; but I am disposed to think it something different ; and therefore am of opinion, that, in the Nephralgia Calculosa produced upon this occasion, the remedies of inflammation are to be employed no farther than they may be otherwise sometimes necessary in that disease, arising from other causes than the gout.

